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January 1987 - August 1990

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Drip and Trickle Irrigation for Water Conservation

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National Agricultural Library Cataloging Record:

MacLean, Jayne T.
Drip and trickle irrigation for water conservation.
(Quick bibliography series ; 91-23)
1. Water conservation--Bibliography. 2. Trickle irrigation--Bibliography. I. Title.
aZ5071.N3 no.91-23

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DRIP AND TRICKLE IRRIGATION FOR WATER CONSERVATION
SEARCH STRATEGY

S1	24033	IRRIGAT?
S2	900	DRIP?
S3	943	TRICKLE
S4	1378	IRRIGAT? AND (DRIP? OR TRICKLE)
S5	19	CABLEGATION
S6	0	SURGEGATION
S7	19	CABLEGATION OR SURGEGATION
	19	S7
S8	0	SURGIGATION
S9	19	S7 OR SURGIGATION
S10	149	SURGE
S11	24033	IRRIGAT?
S12	19	SURGE(W)IRRIGAT?
S13	70	SUBIRRIGAT?
S14	89	SURGE()IRRIGAT? OR SUBIRRIGAT?
	1378	S4
	19	S7
	89	S14
S15	1483	S4 OR S7 OR S14
S16	1242	S15/ENG,TI,DE
S17	399053	UD=8701 : UD=9999
	1242	S16
S18	440	UD=8701:9999 AND S16

Drip and Trickle Irrigation for Water Conservation

1 NAL Call No: 100 N465R no.631

1988 cost and return estimates for furrow- and drip-irrigated vegetables in selected areas of New Mexico.

Libbin, James D.

New Mexico State University, Agricultural Experiment Station

Las Cruces, N.M. : New Mexico State University, Agricultural Experiment Station; 1988.

107 p. ; 28 cm. (Research report (New Mexico State University. Agricultural Experiment Station) ; 631.). Cover title. December 1988. Bibliography: p. 107.

Language: English

Descriptors: Vegetables--New Mexico--Irrigation

2 NAL Call No: 290.9 AM3PS (IR)

Adjusted F factor for multiple-outlet pipes.

Scaloppi, E.J.

New York, N.Y. : American Society of Civil Engineers; 1988 Feb.

Journal of irrigation and drainage engineering v. 114 (1): p. 169-174; 1988 Feb. Includes references.

Language: English

Descriptors: Sprinkler irrigation; Pipelines; Trickle irrigation

3 NAL Call No: 80 AC82

Advantages of subsurface irrigation for processing tomatoes.

Phene, C.J.; Davis, K.R.; Hutmacher, R.B.; McCormick, R.L.

Wageningen : International Society for Horticultural Science; 1987 Mar.

Acta horticulturae (200): p. 101-114. ill; 1987 Mar. In the series analytic: Processing tomatoes / edited by W.L. Sims. Proceedings of an International Symposium, August 11-20, 1986, Davis, California. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Subsurface irrigation; Installations; Trickle irrigation; Deep placement; Surface irrigation; Nutrient uptake; Nitrogen; Phosphorus; Irrigation scheduling; Crop yield

4 NAL Call No: 309.9 N216

Agricultural plastic uses in California.

Hall, B.J.

Peoria, Ill. : National Agricultural Plastics Association; 1983.

Proceedings of the ... National Agricultural Plastics Congress (17th): p. 5-11; 1983.

Language: English

Descriptors: California; Greenhouse culture; Plastics; Trickle irrigation; Mulches; Soil fumigation; Greenhouse crops; Acreage

5 NAL Call No: S544.3.A6C6

Alternative irrigation systems.

Fangmeier, D.D.; Biggs, E.N.

Tucson, Ariz. : The Service; 1986 Mar.

[Publication] - Cooperative Extension Service, University of Arizona, College of Agriculture (8555): 4 p.; 1986 Mar.

Language: English

Descriptors: Arizona; Irrigation systems; Water use efficiency; Cost benefit analysis; Furrow irrigation; Border irrigation; Modifications; Sprinkler irrigation; Trickle irrigation

6 NAL Call No: 56.9 SO3

Analysis of water flow under trickle irrigation. I. Theory and numerical solution.

Lafolie, F.; Guennelon, R.; Van Genuchten, M.T.

Madison, Wis. : The Society; 1989 Sep.

Soil Science Society of America journal v. 53 (5): p. 1310-1318; 1989 Sep. Includes references.

Language: English

Descriptors: Soil water movement; Flow; Trickle irrigation; Ponding; Saturated conditions; Surface layers; NumeRical analysis; Simulation models

Abstract: Estimating the size of the ponded surface area is a major source of error in modeling water movement under tickle irrigation. After reviewing available approaches and models for simulating water flow under trickle irrigation, we present a new numerical solution of the governing partial differential equations that improves the prediction of the size of the ponded area at the soil surface. A common formulation could be used for both Cartesian and axicylindrical flow geometries. The spatial operator was approximated using finite differences, and time integration was performed with an implicit method. Nonlinearity was treated by means of a fixed point iterative algorithm. The proposed model is applicable to saturated-unsaturated flow in layered soils having anisotropic hydraulic properties. Accuracy and stability of the solution are checked and comparisons made with

previous numerical solutions for several trickle irrigation and other unsaturated flow problems.

7 NAL Call No: 56.9 SO3
Analysis of water flow under trickle irrigation. II. Experimental evaluation.
Lafolie, F.; Guennelon, R.; Van Genuchten, M.T.
Madison, Wis. : The Society; 1989 Sep.
Soil Science Society of America journal v. 53 (5): p. 1318-1323; 1989 Sep. Includes references.

Language: English

Descriptors: France; Soil water content; Soil water retention; Hydraulic conductivity; Trickle irrigation; Ponding; Crusts; Soil depth; Bulk density; Physico-chemical properties of soil; Light textured soils; Prediction

Abstract: A numerical solution for predicting soil water content distributions during trickle irrigation on stratified and anisotropic soils was compared with data from a field experiment carried out on a loamy clay soil using 24 field plots irrigated at different rates and frequencies. The unsaturated hydraulic conductivity was estimated from measured soil water retention and saturated hydraulic conductivities. Observed volumetric soil water contents and saturated areas on the soil surface were compared with model predictions. The effects of anisotropy and soil surface crusting on experimental and calculated soil water distributions were also investigated. Relatively good agreement was obtained between predicted and measured soil water content distributions vs. depth. The shape of the observed wetted soil volume was also predicted reasonably well. The effects of possible errors in the hydraulic characteristics on calculated water content distributions are discussed.

8 NAL Call No: TD201.A4
An analytical solution for flow in a manifold.
Warrick, A.W.; Yitayew, M.
Southampton : Computational Mechanics Publications; 1987 Jun.
Advances in water resources v. 10 (2): p. 58-63; 1987 Jun. Includes references.

Language: English

Descriptors: Water flow resistance; Water resource management; Trickle irrigation; Laminar flow; Lateral forces; Mathematical models

9 NAL Call No: SB319.2.F6F56
Application of avermectin and cyromazine via drip irrigation and fenamiphos by soil incorporation for control of insect and nematode pests in chrysanthemums.
Overman, A.J.; Price, J.F.
s.l. : The Society; 1985 Jun.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 97: p. 304-306; 1985 Jun. Includes references.

Language: English

Descriptors: Chrysanthemum; Insect pests; Plant parasitic nematodes; Nematicides; Insecticide application; Trickle irrigation; Soil incorporation methods

10 NAL Call No: SB998.N4A5
Application of nematicides via drip irrigation.
Apt, W.J.; Caswell, E.P.
Lawrence, Kan. : Society of Nematologists; 1988 Oct.
Annals of applied nematology v. 2: p. 1-10. ill; 1988 Oct. Literature review. Includes references.

Language: English

Descriptors: Plant parasitic nematodes; Nematode control; Nematicides; Application methods; Trickle irrigation; Ananas comosus

11 NAL Call No: 56.9 SO3
Application of soil conditioner solutions to soil columns to increase water stability of aggregates.
Shaviv, A.; Ravina, I.; Zaslavsky, D.
Madison, Wis. : The Society; 1987 Mar.
Soil Science Society of America journal v. 51 (2): p. 431-436; 1987 Mar. Includes references.

Language: English

Descriptors: Soil stabilization; Soil stabilizers; Soil conditioners; Aggregates; Polymers; Trickle irrigation

12 NAL Call No: 56.9 SO3
Application of urea phosphate and urea sulfate to drip-irrigated tomatoes grown in calcareous soil.
Mikkelsen, R.L.; Jarrell, W.M.
Madison, Wis. : The Society; 1987 Mar.
Soil Science Society of America journal v. 51 (2): p. 464-468; 1987 Mar. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Fertilizer application; Urea phosphates; Sulfates; Calcareous soils; Trickle irrigation

13 NAL Call No: 60.18 J82
Atrazine dissipation and off-plot movement in a Nebraska sandhills subirrigated meadow.
Brejda, J.J.; Shea, P.J.; Moser, L.E.; Waller, S.S.
Denver, Colo. : Society for Range Management; 1988 Sep.
Journal of range management v. 41 (5): p. 416-420; 1988 Sep. Includes references.

Language: English

Descriptors: Nebraska; Range management; Vegetation; Atrazine; Herbicides; Herbicide residues; Dispersion; Kinetics; Groundwater pollution; Runoff; Physico-chemical properties of soil

14 NAL Call No: QK870.I5 1987
Automated system for detailed measurement of soil water potential profiles using Watermark brand sensors.
Armstrong, C.F.; Ligon, J.T.; McLeod, M.F.
Logan, Utah : Utah State University, [1987?]; 1987.
Proceedings of International Conference on Measurement of Soil and Plant Water Status : in commemoration of the centennial of Utah State University, July 6-10, 1987, Logan, Utah. v. 1 p. 201-206. ill; 1987. Includes references.

Language: English

Descriptors: Soil water potential; Soil water; Tension; Measurement; Rhizosphere; Trickle irrigation; Prunus persica; Sensors; Calibration; Automation; Systems

15 NAL Call No: S494.5.W3A3
Bare soil evaporation near a surface point-source emitter.
Matthias, A.D.; Salehi, R.; Warrick, A.W.
Amsterdam : Elsevier Scientific; 1986 Sep.
Agricultural water management v. 11 (3/4): p. 257-277. ill; 1986 Sep. Includes references.

Language: English

Descriptors: Arizona; Evaporation; Trickle irrigation; Soil water; Lysimeters; Thermometers; Measurement; Surface area of soil materials

16 NAL Call No: S619.T74V3
B.C. trickle irrigation manual.
Van der Gulik, Ted W.
Irrigation Industry Association of British Columbia, British Columbia, Agricultural Engineering Branch
Abbotsford : B.C. Ministry of Agriculture and Fisheries, Agricultural Engineering Branch; 1987.
[168] p. : ill. ; 28 cm. This manual was made possible through efforts initiated by the Irrigation Industry Association of British Columbia. Cf. Ackowledgement. Bibliography: p. [167-168].

Language: English

Descriptors: Trickle irrigation--British Columbia; Trickle irrigation--British Columbia--Handbooks, manuals, etc

17 NAL Call No: 290.9 AM32T
Border cablegation system design.
Trout, T.J.; Kincaid, D.C.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1989 Jul.
Transactions of the ASAE v. 32 (4): p. 1185-1192. ill; 1989 Jul. Includes references.

Language: English

Descriptors: Surface irrigation; Models; Irrigation systems; Design calculations; Border irrigation

18 NAL Call No: S1.N32
Building a drought-proof farm.
Cramer, C.
Emmaus, Pa. : Regenerative Agriculture Association; 1988 Nov.
The New farm v. 10 (7): p. 10-15. ill; 1988 Nov.

Language: English

Descriptors: Illinois; Farming systems; Drought; Cash crops; Trickle irrigation; Diversity; Cost control; Acreage; Cover crops; Organic farming; Appropriate technology

19 NAL Call No: FICHE S-72
Cablegation after five years.
Trout, T.J.; Kemper, W.D.; Kincaid, D.C.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2580): 10 p. ill; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Western states of usa; Surface irrigation; Automatic irrigation systems

20 NAL Call No: TC801.A34
Cablegation: automated supply for surface irrigation.
Kemper, W.D.; Trout, T.J.; Kincaid, D.C.
New York : Academic Press; 1987.
Advances in irrigation v. 4: p. 1-66. ill; 1987. Includes references.

Language: English

Descriptors: Surface irrigation; Automatic irrigation systems; Pipelines; Water use efficiency; Mathematical models

21 NAL Call No: 290.9 AM32T
Cablegation VI. The waterbrake controller.
Kincaid, D.C.
St. Joseph, Mich. : The Society; 1985 Nov.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (6): p. 1957-1960. ill; 1985 Nov. Includes references.

Language: English

Descriptors: Surface irrigation; Hydraulic systems

22 NAL Call No: 275.29 M68EXT
Chemigation.
Thomas, J.G.; Pennington, D.A.; Pringle, L.
State College, Miss. : The Service; 1987 May.
Publication - Cooperative Extension Service, Mississippi State University (1551): 8 p. ill; 1987 May.

Language: English

Descriptors: Chemicals; Application equipment; Trickle irrigation; Fertirrigation; Fertilizer application; Maintenance; Safety

23 NAL Call No: TD420.A1P7
Clogging in irrigation systems reusing pond effluents and its prevention.
Adin, A.
Oxford : Pergamon Press; 1987.
Water science and technology : a journal of the International Association on Water Pollution Research v. 19 (12): p. 323-328; 1987. Includes references.

Language: English

Descriptors: Israel; Waste water treatment; Trickle irrigation; Ponds; Water reuse; Water filters; Filtration; Particles

24 NAL Call No: 100 C12CAG
Clogging of buried drip irrigation systems.
Schwankl, L.J.; Prichard, T.L.
Oakland, Calif. : Division of Agriculture and Natural Resources, University of California; 1990 Jan.
California agriculture v. 44 (1): p. 16-17; 1990 Jan.

Language: English

Descriptors: Trickle irrigation; Irrigation systems; Irrigation water; Lime (mineral); Deposition; Control methods; Groundwater; Water composition and quality

25 NAL Call No: FICHE S-72
Comparative fertilizer application techniques for stone fruit.
Hahn, B.R.; Bralts, V.F.; Kesner, C.D.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2127): 29 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Prunus cerasus; Fertilizer application; Nitrogen fertilizers; Trickle irrigation; Fertirrigation; Efficiency

26 NAL Call No: S612.I756
Comparative transpiration of irrigated juvenile eucalypts in the Negev Desert.
Herwitz, S.R.; Gutterman, Y.; Srinivasan, R.
Berlin, W. Ger. : Springer International; 1988.
Irrigation science v. 9 (3): p. 233-247. maps; 1988. Includes references.

Language: English

Descriptors: Israel; Eucalyptus; Species; Trickle irrigation; Water use; Transpiration; Plant water relations; Soil water evaporation; Deserts; Irrigation scheduling

27 NAL Call No: 80 AC82
Comparison of drip and basin irrigation systems in banana orchards on the southern coast of Turkey.
Cevik, B.; Kaska, N.; Tekinel, O.; Pekmezci, M.; Yaylali, N.; Paydas, S.
Wageningen : International Society for Horticul-

tural Science; 1988 Sep.
Acta horticulturae (228): p. 213-218. ill; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Turkey; Musa; Orchards; Basin irrigation; Trickle irrigation; Water use efficiency; Yield response functions; Fruit; Chemical composition; Crop quality

28 NAL Call No: SB1.H6
Comparison of drip and furrow irrigation for muskmelon production.
Bogle, C.R.; Hartz, T.K.
Alexandria, Va. : American Society for Horticultural Science; 1986 Apr.
HortScience v. 21 (2): p. 242-244; 1986 Apr. Includes references.

Language: English

Descriptors: Cucumis melo; Earliness; Yields; Responses; Furrow irrigation; Trickle irrigation; Water use efficiency

29 NAL Call No: FICHE S-72
Comparison of drip irrigation and subirrigation for sugarcane production.
Shih, S.F.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2128): 27 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Saccharum officinarum; Yields; Trickle irrigation; Subsurface irrigation; Soil water content; Soil water potential; Evapotranspiration

30 NAL Call No: 290.9 AM32T
Comparison of equipment for the installation and retrieval of drip irrigation laterals.
Coates, W.
St. Joseph, Mich. : The Society; 1985 Jul.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (4): p. 1173-1177. ill; 1985 Jul. Includes references.

Language: English

Descriptors: Trickle irrigation; Equipment; Rowcrops

31 NAL Call No: 81 SO12
Comparison of subsurface trickle and furrow irrigation on plastic-mulched and bare soil for tomato production.
Bogle, C.R.; Hartz, T.K.; Nunez, C.
Alexandria, Va. : The Society; 1989 Jan.
Journal of the American Society for Horticultural Science v. 114 (1): p. 40-43; 1989 Jan. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Subsurface irrigation; Furrow irrigation; Plastic mulches; Mulching; Water use efficiency; Crop yield

Abstract: Subsurface trickle and furrow irrigation of fresh-market tomato (Lycopersicon esculentum Mill.), with or without plastic mulch, were compared for three consecutive growing seasons. Plots were irrigated when available soil water was 40% depleted. Marketable tomato yield was 22% greater for plants grown with trickle irrigation than with furrow irrigation. Use of black plastic mulch resulted in 31% and 16% greater marketable tomato yield in Spring 1983 and 1984, than similar bare-soil (unmulched) treatments, respectively. In Fall 1983, use of white/black (top/bottom) laminated plastic mulch reduced yields by 12% compared to similar unmulched treatments. Total water (irrigation plus precipitation) applied to furrow-irrigated plots nearly equalled pan evaporation (Epan). Trickle-irrigated plots received less than 45% of Epan in all seasons, resulting in increased water-use efficiency with drip irrigation. Trickle irrigation as applied did not affect soluble salts concentration in the soils.

32 NAL Call No: FICHE S-72
Comparison of surge and cablegation to continuous furrow irrigation.
Israeli, I.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2014): 15 p. ill., maps; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricul-

tural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Colorado; Irrigation systems; Energy conservation; Water conservation

33 NAL Call No: SB319.2.F6F56
Computer management of trickle irrigation systems.
Zazueta, F.S.; Smajstrla, A.G.; Harrison, D.S.
s.l. : The Society; 1985 Jun.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 97: p. 1-3. ill; 1985 Jun. Includes references.

Language: English

Descriptors: Computer software; Management; Trickle irrigation; Irrigation scheduling; Citrus; Orchards

34 NAL Call No: S539.5.A77
A computer model for evaluation of trickle irrigation subunit design.
Pitts, D.J.; Ferguson, J.A.; Tacker, P.L.
New York : Springer; 1987.
Applied agricultural research v. 2 (4): p. 213-217; 1987. Includes references.

Language: English

Descriptors: Trickle irrigation; Design; Emitters; Models; Computer software

35 NAL Call No: FICHE S-72
A computer model to aid in drip irrigation system subunit design.
Pitts, D.J.; Ferguson, J.A.; Tacker, P.L.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2101): 18 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Computers; Models; Trickle irrigation; Design

36 NAL Call No: FICHE S-72
A computer model to evaluate trickle/drip irrigation lateral design.
Pitts, D.; Ferguson, J.; Wright, R.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2617): 17 p. ill; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Computers; Models; Trickle irrigation; Design; Evaluation; Irrigation equipment; Performance testing

37 NAL Call No: 4 AM34P
A continuous two-variable design using the line-source concept.
Magnusson, D.A.; Asher, J.B.; De Malach, Y.
Madison, Wis. : American Society of Agronomy; 1989 Jan.
Agronomy journal v. 81 (1): p. 132-133; 1989 Jan. Includes references.

Language: English

Descriptors: Experimental design; Experimental equipment; Trickle irrigation; Saline water; Irrigation water; Gradients; Nitrogen fertilizers

Abstract: Multivariable experiments involving different water salinities are usually conducted using drip irrigation. Preparing the irrigation system to apply these different treatments requires a considerable investment of labor and materials. This study was conducted to examine an alternative irrigation system that is relatively simple and inexpensive, yet produces gradients of two variables. A variation of the line-source irrigation system was tested using water salinity and N levels as variables. The middle line of a triple line-source irrigated using saline water (7.0 dS m-1), while the two parallel outside lines irrigated using nonsaline water (1.0 dS m-1). A second triple line-source using only nonsaline water was superimposed perpendicularly on the first set. Ammonium nitrate was injected

into the middle line. This layout produced linear gradients for both variables (r2 = 0.99), perpendicular to their source and provided every possible combination of saline water concentrations (7.0-1.0 dS m-1) and N levels (8.1-0.0 mmol L-1). It proved to be a simple yet highly informative system.

38 NAL Call No: 309.9 N216
Continuous use of polyethylene mulched beds with overhead or drip irrigation for successive vegetable production.
Clough, G.H.; Locascio, S.J.; Olson, S.M.
Peoria, Ill. : National Agricultural Plastics Association; 1987.
Proceedings of the ... National Agricultural Plastics Congress v. 20: p. 57-61; 1987. Includes references.

Language: English

Descriptors: Brassica oleracea; Lycopersicon esculentum; Cucurbita pepo; Vegetables; Plant production; Trickle irrigation; Polyethylene; Plastic mulches

39 NAL Call No: 309.9 N216
Control of the ionic composition of the rhizosphere under a full-bed mulch.
Geraldson, C.M.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 232-239; 1986. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Mulches; Trickle irrigation; Rhizosphere; Ion uptake; Mulching

40 NAL Call No: 1.9 P69P
Control of Tylenchulus semipenetrans on citrus with fenamiphos and oxamyl.
Davis, R.M.; Wilhite, H.S.
St. Paul, Minn. : American Phytopathological Society; 1985 Nov.
Plant disease v. 69 (11): p. 974-976; 1985 Nov. Includes 9 references.

Language: English

Descriptors: Citrus; Tylenchulus semipenetrans; Nematode control; Fenamiphos; Oxamyl; Application methods; Trickle irrigation

41 NAL Call No: TC803.178
Controlled-drainage supplements subirrigation in humid regions.
Fouss, J.L.; Carter, C.E.
New York, N.Y. : ASCE; 1987.
Irrigation systems for the 21st century : proceedings of a conference : Portland, Oregon, July 28-30, 1987 / edited by Larry G. James and Marshall J. English. p. 1-8. ill; 1987. Includes references.

Language: English

Descriptors: Usa; Drainage systems; Drainage water; Irrigation systems; Irrigation water; Water table; Water management; Control methods; Simulation models

42 NAL Call No: 290.9 AM32T
Controlled-drainage/subirrigation simulation for a claypan soil.
Mostaghimi, S.; Lembke, W.D.; Boast, C.W.
St. Joseph, Mich. : The Society; 1985 Sep.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (5): p. 1557-1563; 1985 Sep. Includes references.

Language: English

Descriptors: Subsurface drainage; Subsurface irrigation; Clay pans; Permeability; Crop production

43 NAL Call No: QK867.J67
Corking of 'Delicious' apples (Malus domestica Borkh.) on four rootstocks as affected by calcium and boron supplied through trickle irrigation.
Smith, C.B.; Morrow, C.T.; Greene, G.M. II
New York, N.Y. : Marcel Dekker; 1987.
Journal of plant nutrition v. 10 (9/16): p. 1917-1924; 1987. Paper presented at the "Tenth International Plant Nutrition Colloquium", August 4-9, 1986, Beltsville, Maryland. Includes references.

Language: English

Descriptors: Pennsylvania; Malus pumila; Rootstocks; Leaf analysis; Peel; Cork spot; Nutrient deficiencies; Calcium; Boron; Trickle irrigation; Nutrient uptake; Translocation

44 NAL Call No: 8 P832J
Cost of a drip irrigation system for vegetable farming in Puerto Rico.
Persaud, T.; Goyal, M.R.; Bellerive, P.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1988 Jan.
The Journal of agriculture of the University of Puerto Rico v. 72 (1): p. 31-40. ill; 1988 Jan. In-

cludes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Trickle irrigation; Costs; Irrigation systems; Vegetables; Computer analysis

45 NAL Call No: SB387.76.M3M37
The cost of drip irrigation at Martha's vineyard of Maryland.
Mead, G.
Germantown, Md. : Maryland Grape Growers Association; 1989.
The Maryland grapevine v. 9 (2): p. 7-8; 1989.

Language: English

Descriptors: Maryland; Vineyards; Trickle irrigation; Costs

46 NAL Call No: FICHE S-72
Cotton canopy temperature in trickle irrigation.
Gaitan, C.A.; McFarland, M.J.; Moore, J.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2064): 16 p. ill; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Texas; Gossypium; Canopy; Temperature; Trickle irrigation; Water stress

47 NAL Call No: S612.I756
Cotton growth and production under drip-irrigation restricted soil wetting.
Plaut, Z.; Carmi, A.; Grava, A.
Berlin, W. Ger. : Springer International; 1988.
Irrigation science v. 9 (2): p. 143-156; 1988. Includes references.

Language: English

Descriptors: Israel; Gossypium hirsutum; Cultivars; Plant production; Cultural methods; Trickle irrigation; Water requirements; Irrigation scheduling; Plant density; Yield factors; Plant development; Soil water regimes

48 NAL Call No: FICHE S-72
Cotton under micro and level basin irrigation methods.
Bucks, D.A.; Allen, S.G.; Roth, R.L.; Gardner, B.R.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2036): 22 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Surface irrigation; Irrigation scheduling; Gossypium; Crop yield; Leaf water potential; Photosynthesis; Transpiration

49 NAL Call No: S596.7.A8 1984
Cyclic variation in nitrogen availability under irrigation.
Bacon, P.E.
Melbourne : CSIRO, [1985?]; 1985.
Root zone limitations to crop production on clay soils : Symposium of the Australian Society of Soil Science Inc. Riverina Branch, Griffith, N.S.W. 25-27 September 1984 / editors: W.A. Muirhead, E. Humphreys. p. 93-99; 1985. Includes references.

Language: English

Descriptors: Crops; Irrigated conditions; Nitrogen cycle; Variations; Trickle irrigation; Flooding; Nitrates; Losses from soil systems; Nitrogen mineralization; Nitrification; Denitrification

50 NAL Call No: 80 AM371
Desert gardens: landscaping the Arabian Desert is an ongoing war against the land's natural soil and water traits.
Petrie, A.W.
Chicago, Ill. : American Nurseryman Publishing Company; 1989 Jul01.
American nurseryman v. 170 (1): p. 100-112, 114, 116, 118. ill; 1989 Jul01. Includes references.

Language: English

Descriptors: Saudi arabia; Desert plants; Desert climate; Landscape gardening; Arid soils; Trickle irrigation; Water supplies; Saline water; Alkaline water; Alkaline soils; Saline soils; Soil amendments

51 NAL Call No: 65.9 SO83

The design and operation of 560 hectare of drip irrigation at Simunye Sugar Estate (Swaziland).
Pollok, J.G.; Bosua, H.
Mount Edgecombe : The Association; 1986.
Proceedings of the annual congress - South African Sugar Technologists' Association (60th): p. 172-176. ill., maps; 1986. Meeting held June 16-19, 1986, Durban and Mount Edgecombe, South Africa.

Language: English

Descriptors: Swaziland; Saccharum; Trickle irrigation; Design; Irrigation equipment

52 NAL Call No: FICHE S-72
Design of a drainage/subirrigation system by NMOL technique.
Prasher, S.O.; Madramootoo, C.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2057): 20 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Mathematics; Systems; Subsurface irrigation; Subsurface drainage; Design

53 NAL Call No: FICHE S-72
Design of drainage-subirrigation systems for Georgia flatwoods soils.
Shirmohammadi, A.; Thomas, D.L.; Threadgill, E.D.; DaSilva, F.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2605): 28 p. ill; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Georgia; Drainage systems; Irrigation systems; Subsurface irrigation; Water requirements; Design; Simulation models

54 NAL Call No: SB21.I6P8
Designing trickle irrigation systems.
Cammarata, L.D.; Hamilton, D.F.
West Lafayette, Ind. : The Service; 1979.
HO - Purdue University, Cooperative Extension Service (154): 10 p. ill; 1979. Includes references.

Language: English

Descriptors: Irrigation systems; Trickle irrigation; Design; Guidelines

55 NAL Call No: S1.S68
Determination of reliability of drip cocks and irrigation pipes of drip systems.
Naumenko, I.I.
New York, N.Y. : Allerton Press; 1986.
Soviet agricultural sciences (12): p. 54-55; 1986. Translated from: Vsesoiuznaia akademiia sel'skokhoziaistvennykh nauk, Doklady, (12), 1986, p. 35-37. (20 AK1). Includes references.

Language: English; Russian

Descriptors: Trickle irrigation; Pipes; Irrigation systems; Irrigation water; Flow; Mathematical models

56 NAL Call No: FICHE S-72
Development and testing of a prototype plastic-mulch, drip irrigation pipe layer.
Haffar, I.; Bassiri, M.; Marrush, M.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-1021): 14 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Plastic pipes; Plastic mulches; Machinery; Performance testing; Trickle irrigation

57 NAL Call No: DISS 13-22,903
Direct seeding of guayule using drip irrigation.
Abrahams, Jonathan
1984; 1984, reprinted 1988.
viii, 64 p. : ill. Bibliography: p. 62-64.

Language: English

58 NAL Call No: S494.5.W3B43
Dispersion losses in trickle irrigation.
Svehlik, Z.J.; Ghali, G.S.
Paris : Institut national de la recherche agronomique; 1985.
Les Besoins en eau des cultures; Crop water requirements : conf int, Versailles (France), 11-14 sept. 1984 / tenue au siege de l'Unesco avec le concours de l'OAA et de l'OMM; held at Unesco under auspices of FAO and WMO. p. 533-546. ill; 1985. Paper presented at an International Conference on "Crop Water Requirements," September 11-14, 1984, Versailles, France. Includes references.

Language: English (Summary in French)

Descriptors: Root Zone flux; Trickle irrigation; Losses; Water depletion; Soil moisture

59 NAL Call No: 4 AM34P
Distribution of dry matter between shoots and roots of irrigated and nonirrigated determinate soybeans.
Huck, M.G.; Peterson, C.M.; Hoogenboom, G.; Busch, C.D.
Madison, Wis. : American Society of Agronomy; 1986 Sep.
Agronomy journal v. 78 (5): p. 807-813; 1986 Sep. Includes references.

Language: English

Descriptors: Alabama; Glycine max; Dry matter accumulation; Shoots; Roots; Translocation; Irrigated conditions; Drought; Water stress; Trickle irrigation; Harvest index

60 NAL Call No: aZ5071.N3
Drip and trickle irrigation, 1984-85.
MacLean, J.T.
Beltsville, Md. : The Library; 1986 Apr.
Quick bibliography series - National Agricultural Library (U.S.). (86-58): 16 p.; 1986 Apr. Bibliography.

Language: English

Descriptors: Trickle irrigation

61 NAL Call No: aZ5071.N3
Drip and trickle irrigation 1985-April 1987.
Maclean, J.T.
Beltsville, Md. : The Library; 1987 Sep.
Quick bibliography series - National Agricultural Library (U.S.). (87-68): 28 p.; 1987 Sep. Updates QB 86-58. Bibliography.

Language: English

Descriptors: Trickle irrigation; Irrigated farming

62 NAL Call No: 421 J822
Drip chemigation of asparagus with disulfoton: Brachycorynella asparagi (Homoptera: Aphididae) control and disulfoton degradation.
Wildman, T.E.; Cone, W.W.
College Park, Md. : Entomological Society of America; 1986 Dec.
Journal of economic entomology v. 79 (6): p. 1617-1620; 1986 Dec. Includes references.

Language: English

Descriptors: Washington; Asparagus officinalis; Hemiptera; Disulfoton; Trickle irrigation; Insecticide application; Insect control; Degradation; Insecticide residues; Metabolites; Toxins

63 NAL Call No: 81 M58
Drip irrigation.
Perry, F.
East Lansing, Mich. : The Society; 1984.
Annual report - Michigan State Horticultural Society (114th): p. 86-89; 1984.

Language: English

Descriptors: Fruit trees; Trickle irrigation; Orchards; Soil properties; Fertirrigation; Nutrient uptake

64 NAL Call No: S619.T74S572
Drip irrigation.
Sivanappan, R. K.; Padmakumari, O.1944-; Kumar, V.
Coimbatore : Keerthi Pub. House; 1987.
xvi, 428 p. : ill. ; 23 cm. Bibliography: p. 412-428.

Language: English

Descriptors: Trickle irrigation; Trickle irrigation--India

65 NAL Call No: 290.9 AM3PS (IR)
Drip irrigation and subirrigation of sugarcane.
Shih, S.F.
New York, N.Y. : American Society of Civil Engineers; 1988 Feb.
Journal of irrigation and drainage engineering v. 114 (1): p. 143-155; 1988 Feb. Includes references.

Language: English

Descriptors: Trickle irrigation; Sugarcane; Evapotranspiration; Soil moisture; Canopy; Crop yield

66 NAL Call No: QL391.N4J62
Drip irrigation as a delivery system for infestation of field plots with nematodes.
Becker, J.O.; Monson, M.; Van Gundy, S.D.; Schroth, M.N.
Lake Alfred, Fla. : Society of Nematologists; 1989 Oct.
Journal of nematology v. 21 (4): p. 524-529; 1989 Oct. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Meloidogyne incognita; Trickle irrigation; Inoculation

67 NAL Call No: TC801.A34
Drip irrigation design and evaluation based on the statistical uniformity concept.
Bralts, V.F.; Edwards, D.M.; Wu, I.P.
New York : Academic Press; 1987.
Advances in irrigation v. 4: p. 67-117; 1987. Includes references.

Language: English

Descriptors: Trickle irrigation; Design; Hydraulic engineering; Mathematical models; Statistical methods

68 NAL Call No: FICHE S-72
Drip irrigation design for landscapes.
Hung, J.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2066): 22 p.; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Landscape; Techniques; Design; Residential areas; Water requirements; Ground cover plants; Ornamental shrubs; Ornamental trees

69 NAL Call No: TC823.P52
Drip irrigation for a college container nursery.
Zimmerman, T.L.; Cochran, K.D.
New York, N.Y. : The Society; 1988.
Planning now for irrigation and drainage in the 21st century : proc of a conference : Lincoln, Nebraska, July 18-21, 1988 / sponsored by the Irrig and Drain Div of the American Soc of Civil Engineers ; edited by D.R. Hay. p. 91-97; 1988.

Language: English

Descriptors: Ohio; Nurseries; Use of containers; Trickle irrigation; Container grown plants

70 NAL Call No: SB476.G7
Drip irrigation for fairway trees.
Barton, M.
Overland Park, Kan. : Intertec Publishing Corporation; 1987 Apr.
Grounds maintenance v. 22 (4): p. 98, 100. ill; 1987 Apr.

Language: English

Descriptors: Trickle irrigation; Golf courses; Ornamental trees; Costs

71 NAL Call No: 309.9 N216
Drip irrigation for row crops, an overview.
Allport, D.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 14-25; 1986. Includes references.

Language: English

Descriptors: Rowcrops; Soil moisture; Trickle irrigation

72 NAL Call No: S27.A3
Drip irrigation for windbreak establishment.
Aslin, R.G.
Bozeman, Mont. : Montana State University, Cooperative Extension Service; 1986.
Great Plains Agriculture [i.e. Agricultural] Council publication (117): p. 99-100. ill; 1986. Paper presented at the "International Symposium on Windbreak Technology," June 23-27, 1986, Lincoln, Nebraska.

Language: English

Descriptors: Shelterbelts; Trickle irrigation; Layout and planning

73 NAL Call No: S27.A3
Drip irrigation for windbreaks in eastern Colorado.
Goodrich, L.
Bozeman, Mont. : Montana State University, Cooperative Extension Service; 1986.
Great Plains Agriculture [i.e. Agricultural] Council publication (117): p. 145-146; 1986. Paper presented at the "International Symposium on Windbreak Technology," June 23-27, 1986, Lincoln, Nebraska.

Language: English

Descriptors: Colorado; Shelterbelts; Trickle irrigation; Costs

74 NAL Call No: SB245.B42
Drip irrigation: lowering installation costs, increasing yields and improving water-use efficiency.
Henggeler, J.C.
Memphis, Tenn. : National Cotton Council; 1988.
Proceedings of the...Beltwide Cotton Production Conference. p. 31-32; 1988. Meeting held January 3-8, 1988, New Orleans, Louisiana.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Installations; Costs; Crop yield; Water use efficiency

75 NAL Call No: 290.9 AM32T
Drip irrigation of cotton with saline drainage water.
Ayars, J.E.; Hutmacher, R.B.; Schoneman, R.A.; Vail, S.S.; Felleke, D.
St. Joseph, Mich. : The Society; 1986 Nov.
Transactions of the ASAE - American Society of Agricultural Engineers v. 29 (6): p. 1668-1673; 1986 Nov. Includes references.

Language: English

Descriptors: California; Gossypium hirsutum; Trickle irrigation; Drainage water; Saline water

76 NAL Call No: SB367.O44
Drip irrigation of olive groves: water run.
Cruz Conde Suarez de Tangil, J.; Fuentes Cabanas, M.
Madrid : International Olive Oil Council; 1989 Feb.
Olivae (25): p. 24-25; 1989 Feb.

Language: English

Descriptors: Olea europaea; Trickle irrigation; Irrigation scheduling; Calculation; Transpiration; Field experimentation

77 NAL Call No: 65.9 SO83
Drip irrigation of sugarcane on a poorly draining saline/sodic soil.
Nixon, D.J.; Workman, M.
Mount Edgecombe : The Association; 1987.
Proceedings of the annual congress - South African Sugar Technologists' Association (61st): p. 140-145. ill; 1987. Meeting held on June 22-25, 1987, Durban and Mount Edgecombe, South Africa. Includes references.

Language: English

Descriptors: Saccharum; Trickle irrigation; Saline soils; Sodic soils; Ratooning; Field tests

78 NAL Call No: Q1.A3D5
Drip irrigation of tomatoes and measurement of soil moisture by neutron method.
Judah, O.M.
Amman : University of Jordan; 1986 Feb.
Dirasat v. 13 (2): p. 39-48; 1986 Feb. Includes references.

Language: English (Summary in Arabic)

Descriptors: Trickle irrigation; Lycopersicon esculentum; Soil moisture

79 NAL Call No: 80 AC82
Drip irrigation on tomatoes.
Copestake, J.
Wageningen : International Society for Horticultural Science; 1986 Sep.
Acta horticulturae (190): p. 305-308; 1986 Sep. In the series analytic: Tomato production on arid land / edited by A.S. E1-Beltagy and A.R. Persson. Proceedings of an International symposium, December 9-15, 1984, Cairo, Egypt.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Arid lands; Water use efficiency; Installations

80 NAL Call No: 275.29 D37A
Drip irrigation program makes money for produce growers.
Newark, Del. : The Station; 1982.
Annual report - University of Delaware, College

of Agricultural Sciences, Agricultural Experiment Station and Cooperative Extension Service. p. 14-15. ill; 1982.

Language: English

Descriptors: Delaware; Trickle irrigation; Vegetables; Fruits; Farm results; Costs

81 NAL Call No: 65.9 H317
Drip irrigation scheduling.
Trenholme, C.J.
Aiea, Hawaii : The Technologists; 1985.
Reports ... Annual conference - Hawaiian Sugar Technologists (43rd): p. A15-A19; 1985. Presented at the Annual Conference "Productivity Through People and Technology," November 12-14, 1984, Honolulu, Hawaii.

Language: English

Descriptors: Saccharum; Trickle irrigation; Irrigation scheduling

82 NAL Call No: S612.W3
Drip irrigation: still on the horizon?
Colcombe, J.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1987 Jan.
Water & irrigation review. p. 23-24; 1987 Jan.

Language: English

Descriptors: Florida; Trickle irrigation; Fruits; Vegetables; Irrigation equipment

83 NAL Call No: S544.3.A6C6
Drip or trickle irrigation for ornamentals.
Halderman, A.D.
Tucson, Ariz. : The Service; 1987 Jan.
[Publication] - Cooperative Extension Service, University of Arizona, College of Agriculture (Q27): 3 p. ill; 1987 Jan.

Language: English

Descriptors: Arizona; Ornamental plants; Trickle irrigation; Irrigation equipment; Deserts

84 NAL Call No: 309.9 N216
Drip/trickle fertilizing peppers.
Paterson, J.W.
Peoria, Ill. : National Agricultural Plastics Association; 1987.
Proceedings of the ... National Agricultural Plastics Congress v. 20: p. 183-186; 1987. Includes references.

Language: English

Descriptors: Pepper; Trickle irrigation; Fertilizer application; Crop yield; Yield increases

85 NAL Call No: FICHE S-72
A dual pipe subirrigation-drainage system.
Kanwar, R.S.; Melvin, S.W.; Capece, J.; Sanoja, J.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2549): 19 p. ill; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Subsurface irrigation; Drainage; Systems; Pipes; Soil water; Tension; Water table; Depth; Drainage water; Water composition and quality; Crop yield

86 NAL Call No: 309.9 N216
Durability and efficiency of photodegradable mulches in drip-irrigated vegetable production systems.
Clough, G.H.; Reed, G.L.
Peoria, Ill. : National Agricultural Plastics Association; 1989.
Proceedings of the ... National Agricultural Plastics Congress (21st): p. 42-46; 1989. Includes references.

Language: English

Descriptors: Biodegradable plastics; Photolysis; Plastic mulches; Vegetables; Trickle irrigation; Pepper; Weed control; Sweetcorn

87 NAL Call No: 100 T31S (1) no.1182
Economic analysis of trickle distribution systems, Texas High Plains.
Osborn, J. E.
College Station : Texas Agricultural Experiment Station, Texas A&M University System; 1977.
14 p. : map ; 28 cm. (Bulletin / Texas Agricultural Experiment Station ; 1182). Z, TA245.7, B873, 1182. Caption title. Bibliography: p. 11.

Language: English

Descriptors: Trickle irrigation--Texas; Irrigation

farming--Economic aspects--Texas

88 NAL Call No: S544.3.N6N62
Economics of controlled drainage and subirrigation systems.
Evans, R.O.; Skaggs, R.W.; Sneed, R.E.
Raleigh, N.C. : The Service; 1988 Dec.
AG - North Carolina Agricultural Extension Service, North Carolina State University (397): 17 p. ill; 1988 Dec.

Language: English

Descriptors: North Carolina; Subsurface irrigation; Impeded drainage; Economic analysis; Coastal areas; Capital outlay; Operating costs; Levelling

89 NAL Call No: 309.9 N216
Effect of black plastic mulch and drip irrigation on bell pepper performance.
Brown, J.E.; Lewis, G.A.; Eason, J.T.; Ruf, M.E.; Porch, D.W.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 256-262; 1986. Includes references.

Language: English

Descriptors: Capsicum; Plastic mulches; Trickle irrigation; Color

90 NAL Call No: 290.9 AM32T
Effect of drip irrigation design and management on crop yield.
Sammis, T.W.; Wu, I.P.
St. Joseph, Mich. : The Society; 1985 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (3): p. 832-838; 1985 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Crop yield; Crop management

91 NAL Call No: S539.5.J62
Effect of drip irrigation on root development of newly planted trees.
Abdel-Aziz, M.H.; Abo Hassan, A.A.
Riyadh, Saudi Arabia : University Libraries, King Saud University; 1982.
Journal of the College of Agriculture, King Saud University v. 4: p. 91-104. ill; 1982. Includes references.

Language: English (Summary in Arabic)

Descriptors: Casuarina; Delonix regia; Root systems; Trickle irrigation; Growth stages

92 NAL Call No: QK870.I5 1987
The effect of electrotensiometer placement on wetting pattern in automated drip irrigation of cotton.
Levin, I.; Meron, M.; Or, D.; Shevach, M.
Logan, Utah : Utah State University, [1987?]; 1987.
Proceedings of International Conference on Measurement of Soil and Plant Water Status : in commemoration of the centennial of Utah State University, July 6-10, 1987, Logan, Utah. v. 2 p. 275-280; 1987. Includes references.

Language: English

Descriptors: Gossypium hirsutum; Trickle irrigation; Automation; Tensiometers; Placement; Soil water; Distribution; Patterns; Wetting front

93 NAL Call No: 56.8 C162
Effect of irrigation and nitrogen, phosphorus and potassium rate and placement on tomato fruit yield and size.
Blatt, C.R.; McRae, K.B.
Ottawa : Agricultural Institute of Canada; 1986 Nov.
Canadian journal of soil science; Revue canadienne de la science du sol v. 66 (4): p. 653-660; 1986 Nov. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Irrigation; Npk fertilizers; Fertilizer application; Crop yield; Trickle irrigation; Banding; Yield components

94 NAL Call No: 6 F2212
Effect of irrigation regimes on the water status, vegetative growth and rubber production of guayule plants.
Benzioni, A.; Mills, D.; Forti, M.
Philadelphia, Pa. : The Journal; 1989 Apr.
Farm journal v. 25 (2): p. 189-197; 1989 Apr. Includes references.

Language: English (Summary in Spanish)

Descriptors: Israel; Parthenium argentatum; Irrigation systems; Trickle irrigation; Water use efficiency; Growth; Rubber; Yields; Water stress; Soil water content

95 NAL Call No: 450 C16

The effect of municipal wastewater irrigation and rate of N fertilization on petiole composition, yield and quality of Okanagan Riesling grapes.
Neilsen, G.H.; Stevenson, D.S.; Fitzpatrick, J.J.
Ottawa : Agricultural Institute of Canada; 1989 Oct.
Canadian journal of plant science; Revue canadienne de phytotechnie v. 69 (4): p. 1285-1294; 1989 Oct. Includes references.

Language: English (Summary in French)

Descriptors: British Columbia; Vitis; Trickle irrigation; Waste waters; Irrigation water; Waste utilization; Nitrogen fertilizers; Nitrogen recovery; Petiole analysis; Fruiting; Crop yield; Crop quality; Nutrient removal by plants

96 NAL Call No: 56.9 SO32
Effect of nitrogen source, plant spacing and seedling container cell size on trickle irrigated cauliflower.
Csizinszky, A.A.; Stanley, C.D.
S.l. : The Society; 1987.
Proceedings - Soil and Crop Science Society of Florida v. 46: p. 84-88; 1987. Includes references.

Language: English

Descriptors: Brassica oleracea var. botrytis; Trickle irrigation; Spacing; Nitrogen; Crop yield

97 NAL Call No: 309.9 N216
Effect of plastic mulch and trickle irrigation on tomato growth, yield, and nutrition.
Bhella, H.S.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 80-86; 1986. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Plastic mulches; Soil chemistry; Roots; Growth rate

98 NAL Call No: 18 J825
Effect of plastic mulch on squash (Cucurbita pepo L.): germination, root distribution, and soil temperature under trickle irrigation in the Jordan Valley.
Ghawi, I.; Battikhi, A.M.
Berlin, W. Ger. : Paul Parey; 1988 Mar.
Zeitschrift fur Acker- und Pflanzenbau v. 160 (3): p. 208-215; 1988 Mar. Includes references.

Language: English (Summary in German)

Descriptors: Jordan; Cucurbita pepo; Mulching; Plastic film; Flowering; Germination; Root distribution; Soil temperature; Trickle irrigation

99 NAL Call No: 58.8 J82
Effect of pressure changes on the discharge characteristics of pressure compensating emitters.
Madramootoo, C.A.
London : Academic Press; 1988 Jun.
Journal of agricultural engineering research v. 40 (2): p. 159-164. ill; 1988 Jun. Includes references.

Language: English

Descriptors: Quebec; Trickle irrigation; Emitters; Water management; Pressure regulators; Laboratory tests; Irrigation equipment

100 NAL Call No: QK867.J67
Effect of the fertilization level on the availability and loss of nutrients in an olive-orchard soil.
Troncoso, A.; Barroso, M.; Martin-Aranda, J.; Murillo, J.M.; Moreno, F.
New York, N.Y. : Marcel Dekker; 1987.
Journal of plant nutrition v. 10 (9/16): p. 1555-1561; 1987. Paper presented at the "Tenth International Plant Nutrition Colloquium," August 4-9, 1986, Beltsville, Maryland. Includes references.

Language: English

Descriptors: Spain; Olea europaea; Nutrient availability; Orchard soils; Soil fertility; Fertirrigation; Nitrogen; Urea; Trickle irrigation

101 NAL Call No: SB1.H6
Effect of trickle irrigation and black mulch on growth, yield, and mineral composition of watermelon.
Bhella, H.S.
Alexandria, Va. : American Society for Horticultural Science; 1988 Feb.
HortScience v. 23 (1): p. 123-125; 1988 Feb. Includes references.

Language: English

Descriptors: Sandy loam soils; Trickle irrigation; Plastic mulches; Citrullus lanatus; Cultivars; Growth rate; Crop yield; Earliness

102 NAL Call No: S1.S68
Effective use of drip irrigation in peach orchards.
Storchous, V.N.
New York, N.Y. : Allerton Press; 1986.

Soviet agricultural sciences (8): p. 60-63; 1986. Translated from: Vsesoiuznaia akademiia sel'skokhoziaistvennykh nauk, Doklady, (8), 1986, p. 39-41. (20 AK1). Includes references.

Language: English; Russian

Descriptors: Prunus persica; Orchards; Trickle irrigation; Soil moisture

103 NAL Call No: 290.9 AM32T
Effects of chemical clogging on drip-tape irrigation uniformity.
Hills, D.J.; Nawar, F.M.; Waller, P.M.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1989 Jul.
Transactions of the ASAE v. 32 (4): p. 1202-1206; 1989 Jul. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Blockage; Chemicals; Ph

104 NAL Call No: FICHE S-72
Effects of drain envelope and slope on performance of a drainage-subirrigation system.
Davenport, M.S.; Skaggs, R.W.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2563): 28 p. ill; 1986. Paper presented at the 1986 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Subsurface drainage; Subsurface irrigation; Drain pipes; Fabric; Wraps; Slopes; Performance

105 NAL Call No: 100 H313T
Effects of drip irrigation and nitrogen fertilization on vegetative growth, fruit yield, and mineral compositon of the petioles and fruits of papaya.
Awada, M.; Wu, I.P.; Suehisa, R.H.; Padgett, M M.
Honolulu, Hawaii : The Station; 1979 Dec.
Technical bulletin - Hawaii Agricultural Experiment Station, University of Hawaii (103): 20 p.; 1979 Dec. Includes statistical data. Includes references.

Language: English

Descriptors: Hawaii; CaRica papaya; Trickle irrigation; Nitrogen response; Vegetative period; Crop yield

106 NAL Call No: 80 AC82
Effects of irrigation depth and systems on yield, tree size, canopy and fruit distribution of apricot.
Marangoni, B.; Scudellari, D.; Gaspari, N.; Rossi Pisa, P.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 205-212. ill; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Italy; Prunus armeniaca; Orchards; Trickle irrigation; Sprinkler irrigation; Yield response functions; Fruit; Weight; Fruit trees; Size; Canopy; Soil moisture; Distribution

107 NAL Call No: S612.I756
Effects of limited irrigation on lettuce and Chinese cabbage yields.
Sammis, T.W.; Kratky, B.A.; Wu, I.P.
Berlin, W. Ger. : Springer International; 1988.
Irrigation science v. 9 (3): p. 187-198; 1988. Includes references.

Language: English

Descriptors: Hawaii; Lactuca sativa; Yield response functions; Trickle irrigation; Evapotranspiration; Crop quality; Soil moisture

108 NAL Call No: 1.9 P69P
Effects of metam-sodium applied by drip irrigation on root-knot nematodes, Pythium ultimum, and Fusarium sp. in soil and on carrot and tomato roots.
Roberts, P.A.; Magyarosy, A.C.; Matthews, W.C.; May, D.M.
St. Paul, Minn. : American Phytopathological Society; 1988 Mar.
Plant disease v. 72 (3): p. 213-217; 1988 Mar. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Daucus carota; Pythium ultimum; Fusarium; Meloidogyne incognita; Meloidogyne javanica; Trickle irrigation;

Metham-sodium; Soil fumigation

109 NAL Call No: S494.5.B563A39
The effects of nitrogen fertilizer level and trickle irrigation regime on the rate of inoculation and nitrogenase activity of inoculated peanuts.
Lobe, R.; Schiffmann, J.; Bar Yoseph, B.; Wallerstein, J.S.; Sagiv, B.
Dordrecht : Martinus Nijhoff Publishers; 1984.
Advances in agricultural biotechnology v. 4: p. 348; 1984. Includes references.

Language: English

Descriptors: Arachis hypogaea; Trickle irrigation; Nitrogen fertilizers; Nitrogenase; Enzyme activity; Nodulation; Nitrogen fixation

110 NAL Call No: 58.8 C164
Effects of subsurface drainage and subirrigation on the yields of four crops.
Chieng, S.T.; Keng, J.; Driehuyzen, M.G.
Ottawa : Canadian Society of Agricultural Engineering; 1987 Jan.
Canadian agricultural engineering v. 29 (1): p. 21-26; 1987 Jan. Includes references.

Language: English

Descriptors: British Columbia; Crop yield; Subsurface drainage; Subsurface irrigation; Alluvial soils; Drainage systems; Zea mays; Grasses; Solanum tuberosum; Fragaria

111 NAL Call No: 65.9 H317
Effects of the timing of water deficit on drip-irrigated sugarcane yields.
Santo, L.T.; Bosshart, R.P.
Aiea, Hawaii : The Technologists; 1985.
Reports ... Annual conference - Hawaiian Sugar Technologists (43rd): p. A20; 1985. Presented at the Annual Conference "Productivity Through People and Technology," November 12-14, 1984, Honolulu, Hawaii.

Language: English

Descriptors: Saccharum; Water deficit; Irrigation scheduling

112 NAL Call No: SB319.2.F6F56
Effects of trickle irrigation and fertigation on fruit production and juice quality of Valencia' orange.
Koo, R.C.J.; Smajstrla, A.G.
s.l. : The Society; 1985 Jun.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 97: p. 8-10; 1985 Jun. Includes references.

Language: English

Descriptors: Florida; Citrus sinensis; Yields; Juice quality; Responses; Trickle irrigation; Fertirrigation; Leaf analysis

113 NAL Call No: SB319.2.F6F56
Effects of trickle irrigation methods and amounts of water applied on citrus yields.
Smajstrla, A.G.; Koo, R.C.J.
s.l. : The Society; 1985 Jun.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 97: p. 3-7; 1985 Jun. Includes references.

Language: English

Descriptors: Florida; Citrus sinensis; Yields; Responses; Trickle irrigation; Sprinkler irrigation; Water use

114 NAL Call No: 8 P832J
Effects of water application rates and planting density on size arrangements of drip irrigated onions.
Goyal, M.R.; Guadalupe Luna, R.; Recio de Hernandez, E.; Rivera, L.E.; Caraballo, E.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1985 Jul.
The Journal of agriculture of the University of Puerto Rico v. 69 (3): p. 383-389; 1985 Jul. Includes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Allium cepa; Irrigation water; Trickle irrigation; Yield components; Plant density

115 NAL Call No: 56.9 SO32
Efficacy of metam sodium applied via drip irrigation on tomato.
Overman, A.J.; Csizinszky, A.A.; Jones, J.P.; Stanley, C.D.
S.l. : The Society; 1987.
Proceedings - Soil and Crop Science Society of Florida v. 46: p. 4-7; 1987. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Metham-sodium; Soil fumigation

116 NAL Call No: 55.9 IN8A
Emitter clogging--causes and prevention.
Abbott, J.S.

New Delhi : The Commission; 1985 Jul.
ICID bulletin - International Commission on Irrigation and Drainage v. 34 (2): p. 11-20, 34. ill; 1985 Jul. Includes references.

Language: English; French

Descriptors: Emitters; Blockage; Design; Filtration; Trickle irrigation

117 NAL Call No: 290.9 AM32T
Emitter discharge evaluation of subsurface trickle irrigation systems.
Mizyed, N.; Kruse, E.G.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1989 Jul.
Transactions of the ASAE v. 32 (4): p. 1223-1228. ill; 1989 Jul. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Flow; Computer applications; Models

118 NAL Call No: 290.9 AM32T
Emitter uniformity as an economic factor in trickle system design.
Amir, I.; Seginer, I.
St. Joseph, Mich. : The Society; 1985 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (3): p. 826-831. ill; 1985 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Hydraulic power; Crop production; Seasonal variation

119 NAL Call No: S544.3.A2C47
Energy requirements: the drip irrigation system.
Curtis, L.M.; Tyson, T.W.
Auburn, Ala. : The Service; 1988 Aug.
Circular ANR - Alabama Cooperative Extension Service, Auburn University (515): 2 p. ill; 1988 Aug. In subseries: Agriculture & Natural Resources. Agricultural Engineering.

Language: English

Descriptors: Alabama; Trickle irrigation; Orchards; Pumps; Energy requirements

120 NAL Call No: 80 AM371
Environmentalism and consumer attitudes.
Higginbotham, J.S.
Chicago, Ill. : American Nurseryman Publishing Company; 1989 Mar15.
American nurseryman v. 169 (6): p. 37-38, 40-50, 52; 1989 Mar15.

Language: English

Descriptors: Consumer attitudes; Safety; Environmental protection; Pesticides; Pest control; Weed control; Fertilizers; Trickle irrigation; Organic farming

121 NAL Call No: 80 G85W
Equipping your irrigation system.
Zoldoske, D.; Solomon, K.
Willoughby, Ohio : Meister Pub. Co; 1987 Apr.
Western fruit grower v. 107 (4): p. 18, 20. ill; 1987 Apr.

Language: English

Descriptors: California; Fruits; Orchards; Irrigation systems; Low volume sprayers; Trickle irrigation; Water filters; Emitters; Costs

122 NAL Call No: 80 AM371
Establishing windbreaks with trickle irrigation.
Dickey, G.L.; Hintz, D.
Chicago, Ill. : American Nurseryman Publishing Co; 1987 Dec01.
American nurseryman v. 166 (11): p. 117-118, 120-122. ill; 1987 Dec01. Includes references.

Language: English

Descriptors: Usa; Windbreaks; Plant establishment; Trickle irrigation; Arid regions

123 NAL Call No: 81 SO12
Establishment and yield of asparagus as influenced by planting and irrigation method.
Sterrett, S.B.; Painter VA; Ross, B.B.; Savage, C.P. Jr
Alexandria, Va. : The Society; 1990 Jan.
Journal of the American Society for Horticultural Science v. 115 (1): p. 29-33; 1990 Jan. Includes references.

Language: English

Descriptors: Asparagus officinalis; Planting methods; Sprinkler irrigation; Trickle irrigation; Responses; Survival; Yield response functions; Transplants; Spears; Sandy loam soils

Abstract: New Jersey 'Syn 4' asparagus (Asparagus officinalis, L.) was grown on a sandy loam soil to compare plant survival and yield of asparagus grown from crowns and transplants under four irrigation treatments: sprinkler (SPR), surface trickle (ST), subsurface trickle (SST), and no ir-

rigation (NI). While plant survival of crowns was not appreciably influenced by any irrigation treatment, survival of transplants was significantly increased by SST. Total and marketable yields from crowns and transplants were similar in the first harvest season (year 3). However, in years 4 and 5, the yield of crowns was higher than that of transplants. Subsurface trickle increased yield from transplants in years 4 and 5 and increased yield from crowns in year 5. All irrigation methods significantly increased both spear production (spear/ha) and average spear weight. Subsurface trickle irrigation resulted in the largest increase over NI in total yield and spear production.

124 **NAL Call No: TC803.I78**
Estimating number and duration of on-times for surge irrigation.
Hess, M.E.
New York, N.Y. : ASCE; 1987.
Irrigation systems for the 21st century : proceedings of a conference : Portland, Oregon, July 28-30, 1987 / edited by Larry G. James and Marshall J. English. p. 617-623. ill; 1987.

Language: English

Descriptors: Irrigation systems; Irrigation water; Flow; Computer analysis; Models; Application methods

125 **NAL Call No: SB249.N6**
Estimation of yield potential for drip irrigated cotton based on heat units.
Henggeler, J.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1987.
Proceedings - Beltwide Cotton Production Research Conferences. p. 71-73; 1987. Includes references.

Language: English

Descriptors: Gossypium; Lint; Crop yield; Trickle irrigation; Temperatures; Correlation

126 **NAL Call No: SB319.2.F6F56**
Evaluation of a field method for estimating the water budget of a seepage-subirrigated tomato crop.
Stanley, C.D.
s.l. : The Society; 1986, reprinted 1987.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 99: p. 343-347; 1986, reprinted 1987. Includes references.

Language: English

Descriptors: Florida; Lycopersicon esculentum; Subsurface irrigation; Water budget

127 **NAL Call No: FICHE S-72**
Evaluation of a subsurface drip irrigation system.
Gordon Kruse, E.; Israeli, I.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2034): 24 p. ill; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Colorado; Subsurface irrigation; Trickle irrigation; Performance testing; Zea mays; Medicago sativa

128 **NAL Call No: FICHE S-72**
Evaluation of uniformity parameters for drip irrigation design.
Wu, I.; Irudayaraj, J.M.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2522): 26 p.; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Design; Emitters; Computer simulation

129 **NAL Call No: TC803.I78**
Evaluation of water quality from a drainage-subirrigation system in Georgia.
Thomas, D.L.; Shirmohammadi, A.; Lowrance, R.R.
New York, N.Y. : ASCE; 1987.
Irrigation systems for the 21st century : proceedings of a conference : Portland, Oregon, July 28-30, 1987 / edited by Larry G. James and Marshall J. English. p. 17-24; 1987. Includes references.

Language: English

Descriptors: Georgia; Drainage systems; Drainage water; Irrigation systems; Irrigation water; Water composition and quality

130 NAL Call No: FICHE S-72
Evapotranspiration and irrigation scheduling of drip irrigated cantaloupes.
Phene, C.J.; Davis, K.R.; McCormick, R.I.; Pincot, A.; Meek, D.W.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2526): 14 p.; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: California; Cucumis melo; Trickle irrigation; Irrigation scheduling; Evapotranspiration; Lysimetry; Crop yield

131 NAL Call No: 80 AC82
Experiments with blueberries in the Netherlands.
Dijkstra, J.; Wijsmuller, J.M.
Wageningen : International Society for Horticultural Science; 1989 May.
Acta horticulturae (241): p. 87-90; 1989 May. In the series analytics: Vaccinium Culture / edited by E.J. Stang. Papers presented at the Fourth International Symposium, August 13-17, 1988, East Lansing, Michigan.

Language: English

Descriptors: Netherlands; Vaccinium; Variety trials; Characteristics; Trickle irrigation; Fertirrigation

132 NAL Call No: FICHE S-72
Feedback control of cablegation irrigation systems.
Trout, T.J.; Kincaid, D.C.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2642): 14 p. ill; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Irrigation systems; Feedback; Control; Surface irrigation; Infiltration; Runoff water; Losses; Automation

133 NAL Call No: S590.C63
Fertigation of apples with nitrate or ammonium nitrogen under drip irrigation. I. Tree performance.
Klein, I.; Spieler, G.
New York, N.Y. : Marcel Dekker; 1987 Mar.
Communications in soil science and plant analysis v. 18 (3): p. 311-322; 1987 Mar. Includes references.

Language: English

Descriptors: Israel; Malus pumila; Fertirrigation; Trickle irrigation; Nitrates; Ammonium compounds; Crop yield; Growth; Leaf analysis; Fruit; Fruit analysis

134 NAL Call No: S590.C63
Fertigation of apples with nitrate or ammonium nitrogen under drip irrigation. II. Nutrient distribution in the soil.
Klein, I.; Spieler, G.
New York, N.Y. : Marcel Dekker; 1987 Mar.
Communications in soil science and plant analysis v. 18 (3): p. 323-339; 1987 Mar. Includes references.

Language: English

Descriptors: Israel; Malus pumila; Fertirrigation; Trickle irrigation; Nitrates; Ammonium compounds; Soil analysis; Phosphates; Potassium; Soil ph; Distribution

135 NAL Call No: SB210.T6I5 1983
Fertilizer N use efficiency and associative N2-fixation of sweet potato.
Hill, W.A.; Bacon, P.
Lima, Peru : International Potato Center (CIP); 1984.
Proceedings, Sixth Symposium of the International Society for Tropical Root Crops / hosted by CIP in Lima, Peru, 21-26 February 1983. p. 535-542; 1984. Includes references.

Language: English

Descriptors: Ipomoea batatas; Fertirrigation; Trickle irrigation; Cultivars; Yields; Nitrogen uptake; Nitrogen transfer; Nitrogen fixation

136 NAL Call No: 309.9 N216
Fertilizing tomatoes via drip/trickle irrigation.
Paterson, J.W.
Peoria, Ill. : National Agricultural Plastics Association; 1983.
Proceedings of the ... National Agricultural Plastics Congress (17th): p. 82-87; 1983.

Language: English

Descriptors: New Jersey; Lycopersicon esculentum; Fertilizer application; Trickle irrigation; Nutrient requirements; Crop yield; Product quality

137 NAL Call No: 309.9 N216
Fertilizing vegetables via drip/trickle irrigation.
Paterson, J.W.
Peoria, Ill. : National Agricultural Plastics Association; 1981.
Proceedings of the ... National Agricultural Plastics Congress (16th): p. 163-168; 1981. Includes references.

Language: English

Descriptors: New Jersey; Lycopersicon esculentum; Solanum melongena; Fertirrigation; Fertilizer application; Crop yield

138 NAL Call No: 80 AC82
Fertirrigation and quality in nectarines (cv. Stark Redgold).
Sozzi, A.; Granelli, G.; Spada, G.
Wageningen : International Society for Horticultural Science; 1985 Dec.
Acta horticulturae (173): p. 363-371; 1985 Dec. In the series analytic: Peach Growing / edited by C. Fideghelli. Proceedings of an International Conference, July 9-13, 1984, Verona, Italy. Includes references.

Language: English

Descriptors: Prunus persica; Fertirrigation; Trickle irrigation; Liquid fertilizers; Yields; Productivity; Quality

139 NAL Call No: 290.9 AM32T
Field evaluation of drip irrigation submain units.
Bralts, V.F.; Edwards, D.M.
St. Joseph, Mich. : The Society; 1986 Nov.
Transactions of the ASAE - American Society of Agricultural Engineers v. 29 (6): p. 1659-1664; 1986 Nov. Includes references.

Language: English

Descriptors: Trickle irrigation; Field experimentation; Water conservation; Analysis of variance; Emitters; Flow; Evaluation

140 NAL Call No: FICHE S-72
Field evaluation of drop structures for farm irrigation systems.
Humpherys, A.S.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2634): 21 p. ill; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Structures; Performance appraisals; Long term experiments

141 NAL Call No: 56.9 SO3
Field evaluation of soil hydraulic property changes caused by surge water application.
Saleh, A.; Hanks, R.J.
Madison, Wis. : The Society; 1989 Sep.
Soil Science Society of America journal v. 53 (5): p. 1526-1530; 1989 Sep. Includes references.

Language: English

Descriptors: Utah; Irrigated soils; Pulse irrigation; Soil water content; Saturated hydraulic conductivity; Bulk density; Soil types (textural); Infiltration; Simulation models; Physico-chemical properties of soil

Abstract: Surge flow irrigation was developed, in part, to take advantage of the property of some soils whereby irrigation water is more evenly distributed along the field by applying the water in "surges" (on and off cycles) instead of continuously. Thus, if water advances more during the second on-time of irrigation than the first, there must be some change in soil properties during the previous off-time. Three soils were used in this study: Nibley silty clay loam (a fine, mixed, mesic Aquic Argiustoll), Millville silt loam (a coarse-silty, carbonatic, mesic Typic Haploxeroll), and Kidman sandy loam

(a coarse-loamy, mixed, mesic Calcic Haploxeroll). It was demonstrated by field experiments that the soil surface of the coarse and medium-textured soils consolidated markedly (soil surface elevation decreased about 3 mm) with surge compared to continuous water application for the first irrigation following spring tillage. The saturated hydraulic conductivity (Ksat) of these soils decreased about 45% from the first to the second on-time. The surge effect was more pronounced during the first than the second irrigation. Most of the effect measured occurred during the first 10 to 20 min of the first off-time. Consolidation and Ksat of the fine-textured soil was not changed significantly by the same treatment. Two simple and practical field methods to evaluate this surge effect on soil hydraulic properties were developed: (i) measurement of soil-surface consolidation by measuring the soil-surface elevation changes, and (ii) measurement of Ksat by the dripper method. The soil surface level decreased by more than 1 mm and Ksat changed by about 25% when the surge effect was significant. An infiltration model developed during this study showed that simulated cumulative infiltration for surge water application was similar to measured results for the three soils studied.

142 NAL Call No: FICHE S-72
Field evaluation procedure for surge irrigation.
McCornick, P.G.; Pidmore, T.H.; Duke, H.R.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2081): 20 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Furrow irrigation; Evaluation; Water conservation; Mathematics

143 NAL Call No: 56.8 SO3
Field salinity profile development under drip irrigation with high-sulfate water.
Papadopoulos, I.
Baltimore, Md. : Williams & Wilkins; 1988 Mar.
Soil science v. 145 (3): p. 201-206; 1988 Mar. Includes references.

Language: English

Descriptors: Cyprus; Vertisols; Soil salinity; Trickle irrigation; Soil profiles; Calcium sulfate; Leaching; Rain; Infiltration; Arid Zones; Physico-chemical properties of soil

144 NAL Call No: 290.9 AM32T
Finite element analysis of drip irrigation submain units.
Bralts, V.F.; Segerlind, L.J.
St. Joseph, Mich. : The Society; 1985 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (3): p. 809-814; 1985 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Hydraulic power

145 NAL Call No: FICHE S-72
Finite element analysis of drip irrigation submain units using virtual node substructures.
Bralts, V.F.; Segerlind, L.J.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2040): 29 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Microcomputers; Computer software; Finite element analysis

146 NAL Call No: FICHE S-72
Flow variation of trickle irrigation emitters.
Smajstrla, A.G.; Zazueta, F.S.; Vellidis, G.; Haman, D.Z.; Selman, G.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2096): 7 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes refer-

ences.

Language: English

Descriptors: Mathematics; Trickle irrigation; Emitters; Flow; Variations

147 NAL Call No: 280.28 AL62
For drip irrigated almonds, soil acidification is key concern.
Meyer, R.; Schulbach, H.; Edstrom, J.
Sacramento, Calif. : California Almond Growers Exchange; 1987 May.
Almond facts v. 52 (3): p. 36-37. ill; 1987 May.

Language: English

Descriptors: Prunus amygdalus; Trickle irrigation; Soil acidity; Nitrogen fertilizers

148 NAL Call No: S590.M6
Formation of wetting profile during local (drip) irrigation.
Shein, E.V.; Gudima, I.I.; Meshtyankova, L.
New York, N.Y. : Allerton Press; 1988.
Moscow University soil science bulletin v. 43 (2): p. 43-48; 1988. Translated from: Vestnik Moskovskogo Universiteta. Pochvovedenie, v. 43 (2), 1988, p. 45-51. (S590.M58). Includes references.

Language: English; Russian

Descriptors: Ussr; Soil water regimes; Soil moisture; Wetting; Trickle irrigation; Physical properties of soil; Orchard soils; Chernozems

149 NAL Call No: 23 AU792
Fresh market tomatoes for production on raised beds in New South Wales.
Nguyen, V.Q.; Hermus, R.; McGlasson, W.B.; Meldrum, S.K.; Trethowan, M.E.
Melbourne : Commonwealth Scientific and Industrial Research Organization; 1988.
Australian journal of experimental agriculture v. 28 (1): p. 127-135; 1988. Includes references.

Language: English

Descriptors: New south wales; Lycopersicon; Cultivars; High yielding varieties; Hybrids; Cultivation; Irrigated farming; Trickle irrigation; Plastic mulches; Polyethylene; Product quality; Sensory evaluation; Flavors

150 NAL Call No: SB249.N6
Fruiting and growth characteristics of cotton grown under drip and conventional irrigation.
Stichler, C.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 171-172; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana. Includes references.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Furrow irrigation; Fruiting; Growth; Characteristics

151 NAL Call No: aSD11.A48
Germination and field establishment of juniper in the Southwest.
Fisher, J.T.; Fancher, G.A.; Neumann, R.W.
Ogden, Utah : The Station; 1987 Jan.
General technical report INT - U.S. Department of Agriculture, Forest Service, Intermountain Research Station (215): p. 293-299; 1987 Jan. Paper presented at a "Conference on Pinyon-Juniper," January 13-16, 1986, Reno, Nevada. Includes references.

Language: English

Descriptors: Juniperus monosperma; Seed germination; Stand establishment; Seed treatment; Trickle irrigation

152 NAL Call No: 290.9 AM32T
Global uniformity to trickle irrigation systems.
Solomon, K.H.
St. Joseph, Mich. : The Society; 1985 Jul.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (4): p. 1151-1158; 1985 Jul. Includes references.

Language: English

Descriptors: Trickle irrigation; Simulation models

153 NAL Call No: 81 SO12
Grapefruit leaf and fruit growth in response to drip, microsprinkler, and overhead sprinkler irrigation.
Zekri, M.; Parsons, L.R.
Alexandria, Va. : The Society; 1989 Jan.
Journal of the American Society for Horticultural Science v. 114 (1): p. 25-29; 1989 Jan. Includes references.

Language: English

Descriptors: Citrus paradisi; Trickle irrigation; Sprinkler irrigation; Overhead irrigation; Growth rate; Canopy; Leaf area; Crop yield

Abstract: Fruit and vegetative growth of 21-year-old grapefruit (Citrus paradisi Macf.) trees on well-drained sandy soil was studied in central Florida. Drip, microsprinkler, and overhead sprinkler irrigation was compared at two levels of irrigation (150 and 450 mm.year-1). Significant differences in leaf area, fruit size, fruit growth, new flush growth, and canopy area were found with different irrigation systems applying similar amounts of water. Growth was improved by irrigation even in a year of high rainfall (1410 mm). With mature trees, drip systems promoted the least growth, while overhead sprinkler systems promoted the most. Leaf fresh and dry weights and individual leaf areas in the overhead sprinkler treatments were 40% to 50% greater than in the drip or nonirrigated treatments, while specific leaf weight and leaf water content per unit dry weight were similar for all treatments. Final fruit size and tree canopy area were 9% to 20% greater in the overhead sprinkler treatments than in the corresponding drip or nonirrigated treatments. Responses to microsprinklers were generally intermediate between the overhead sprinkler and the drip treatments. Because of the low soil area coverage, applying water at the higher rate with the drip system did not improve growth as well as the overhead system at the lower rate. With mature grapefruit trees under central Florida conditions, systems providing greater soil area coverage gave better leaf and fruit growth than systems providing less soil coverage.

154 **NAL Call No: S612.W3**
Gravity drip irrigation: a proposal.
Gilead, G.G.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1986 Jul.
Water & irrigation review (special issue): p. 10-11; 1986 Jul.

Language: English

Descriptors: Trickle irrigation; Irrigation systems

155 **NAL Call No: 290.9 AM3PS (IR)**
Green-AMPT--Model to predict surge irrigation phenomena.
Killen, M.A.; Slack, D.C.
New York, N.Y. : American Society of Civil Engineers; 1987 Nov.
Journal of irrigation and drainage engineering v. 113 (4): p. 575-584; 1987 Nov. Includes references.

Language: English

Descriptors: Irrigation systems; Furrow irrigation; Soil texture; Border irrigation; Infiltration; Prediction

156 **NAL Call No: 309.9 N216**
Growing vegetables in Egypt under greenhouse conditions.
Grove, R.W.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 326-327; 1986.

Language: English

Descriptors: Egypt; Vegetables; Greenhouses; Trickle irrigation

157 **NAL Call No: 80 AC82**
Growth and productivity of highbush blueberries as affected by soil amendments, nitrogen fertilization and irrigation.
Lareau, M.J.
Wageningen : International Society for Horticultural Science; 1989 May.
Acta horticulturae (241): p. 126-131; 1989 May. In the series analytics: Vaccinium Culture / edited by E.J. Stang. Papers presented at the Fourth International Symposium, August 13-17, 1988, East Lansing, Michigan. Includes references.

Language: English

Descriptors: Quebec; Vaccinium corymbosum; Cultivars; Soil amendments; Peat; Sawdust; Nitrogen fertilizers; Trickle irrigation; Yield response functions; Leaf analysis; Soil chemistry; Loam soils

158 **NAL Call No: 81 SO12**
Growth and yield of rabbiteye blueberry as affected by orchard floor management practices and irrigation geometry.
Patten, K.D.; Neuendorff, E.W.; Nimr, G.H.; Peters, S.C.; Cawthon, D.L.
Alexandria, Va. : The Society; 1989 Sep.
Journal of the American Society for Horticultural Science v. 114 (5): p. 724-728; 1989 Sep. Includes references.

Language: English

Descriptors: Malus pumila; Seedlings; Dry matter; Weight; Growth retardation; Leaf analysis; Nutrient contents; Pratylenchus penetrans; Inoculum; Cover crops; Tagetes patula; Avena sativa;

Nematode control

Abstract: 'Tifbluc' and 'Delite' rabbiteye blueberry (Vaccinium ashei Reade) plants were grown for 4 years with or without mulch, with cultivated or sodded row middles, and under various irrigation treatments [one drip emitter at the base of the plant, two drip emitters 46 cm on either side of the plant, or a 40 degrees or 360 degrees low-volume spray emitter (LVSE) place midway between plants]. Plant establishment and growth were optimal with 360 degrees LVSE. Differences between irrigation treatments were minimized with mulch. Mulch increased growth of drip-irrigated but not of LVSE-irrigated plants and increased the yield of two-emitter and 360 degrees LVSE-irrigated plants but not of one-emitter or 40 degrees LVSE-irrigated plants. Treatment effects on growth were more apparent in the early establishment phase than in the 4th year of growth and with 'Tifblue' than 'Delite'. Frost damage on 'Delite' was reduced by mulch. Vegetative bud development in the spring and fruit maturity were usually delayed on plants grown between sodded alleys or with mulch. Leaf drop in the fall was also delayed by mulch.

159 NAL Call No: SB13.S3

Growth and yield responses of banana (cultivar 'Williams') to drip irrigation under drought and normal rainfall conditions in the subtropics.

Robinson, J.C.; Alberts, A.J.

Amsterdam : Elsevier Science Publishers; 1986 Dec.

Scientia horticulturae v. 30 (3): p. 187-202; 1986 Dec. Includes references.

Language: English

Descriptors: Musa sapientum; Growth; Yields; Responses; Trickle irrigation; Drought; Subtropics

160 NAL Call No: 81 SO12

Growth of chrysanthemum using an irrigation system controlled by soil moisture tension.

Lieth, J.H.; Burger, D.W.

Alexandria, Va. : The Society; 1989 May.

Journal of the American Society for Horticultural Science v. 114 (3): p. 387-392. ill; 1989 May. Includes references.

Language: English

Descriptors: Chrysanthemum; Container grown plants; Trickle irrigation; Innovations; Computer applications; Automatic control; Soil moisture; Soil water budget; Timing; Greenhouse culture

Abstract: Chrysanthemum x morifolium Ramat. cv. Polaris plants were grown in containers using an irrigation system based either on time (5 min/day) or on soil moisture tensions of -1.5, -3.5, -7.5, and -15 kPa. Soil moisture tensions of -7.5 or -15 kPa caused significant reductions over the time-based treatment in fresh and dry weights of leaves, stems, and inflorescences and total leaf area, but had no influence on inflorescence diameter or cropping time. Stem length was reduced in those plants exposed to the two higher tensions; however, the resulting cut flowers were still long enough to satisfy commercial demands. The amount of water applied in tension-based treatments was 8% to 24% that applied in the time-based treatment. The -1.5- and -3.5-kPa treatments were best suited for minimizing water use while maintaining high crop productivity.

161 NAL Call No: S481.R4

Herbigation in an irrigated macadamia nut orchard.

Hirae, H.H.; Nishimoto, R.K.; Ogata, J.N.; Hylin, J.W.; Holman, F.S.

Honolulu, Hawaii : The Service; 1988 Jul.

Research extension series - College of Tropical Agriculture and Human Resources, University of Hawaii, Cooperative Extension Service (093): 5 p. ill; 1988 Jul. Includes references.

Language: English

Descriptors: Hawaii; Macadamia; Commercial farming; Herbicide application; Trickle irrigation; Operation on slopes

162 NAL Call No: 290.9 AM32T

Hydraulic considerations for compressed subsurface drip-tape.

Hills, D.J.; Tajrishy, M.A.M.; Gu, Y.

St. Joseph, Mich. : American Society of Agricultural Engineers; 1989 Jul.

Transactions of the ASAE v. 32 (4): p. 1197-1201. ill; 1989 Jul. Includes references.

Language: English

Descriptors: California; Irrigation systems; Trickle irrigation; Flow; Hydraulics

163 NAL Call No: 58.8 C164

Hydraulic performances of five different trickle irrigation emitters.

Madramootoo, C.A.; Khatri, K.C.; Rigby, M.

Ottawa : Canadian Society of Agricultural Engineering; 1988 Jan.
Canadian agricultural engineering v. 30 (1): p. 1-4; 1988 Jan. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Flow; Discharges; Performance testing

164 NAL Call No: 275.29 F66C
Hydraulic specifications of trickle irrigation subunits.
Zazueta, F.S.; Harrison, D.S.; Smajstrla, A.G.
Gainesville, Fla. : The Service; 1983 Nov.
Circular - Florida Cooperative Extension Service (584): 17 p.; 1983 Nov. In subseries: Computer Series. Includes references.

Language: English

Descriptors: Trickle irrigation; Computer software; Hydraulic conductivity; Evaluation

165 NAL Call No: 8 P832J
In situ recovery of drip irrigated cabbage roots.
Goyal, M.R.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1987 Oct.
The Journal of agriculture of the University of Puerto Rico v. 71 (4): p. 419-421. ill; 1987 Oct. Includes references.

Language: English

Descriptors: Puerto Rico; Brassica oleracea var. capitata; Roots; Growth factors; Plant development; Trickle irrigation; Fertirrigation

166 NAL Call No: 56.9 SO3
Infiltration and water extraction from trickle irrigation source: the effective hemisphere model.
Ben-Asher, J.; Charach, C.; Zemel, A.
Madison, Wis. : The Society; 1986 Jul.
Soil Science Society of America journal v. 50 (4): p. 882-887. ill; 1986 Jul. Includes references.

Language: English

Descriptors: Infiltration; Soil water; Extraction; Wetting front; Evapotranspiration; Trickle irrigation; Mathematical models

167 NAL Call No: 290.9 AM32T
Infiltration under surge irrigation.
Izuno, F.T.; Podmore, T.H.; Duke, H.R.
St. Joseph, Mich. : The Society; 1985 Mar.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (2): p. 517-521; 1985 Mar. Includes references.

Language: English

Descriptors: Furrow irrigation; Infiltration

168 NAL Call No: 81 SO12
Influence of cultivars, ground covers, and trickle irrigation on early growth, yield, and cold hardiness of peaches on Fox sand.
Layne, R.E.C.; Tan, C.S.
Alexandria, Va. : The Society; 1988 Jul.
Journal of the American Society for Horticultural Science v. 113 (4): p. 518-525; 1988 Jul. Includes references.

Language: English

Descriptors: Prunus persica; Cultivars; Winter hardiness; Cold resistance; Trickle irrigation; Growth rate; Yield factors; Ground vegetation; Orchards

169 NAL Call No: 80 J825
Influence of daily intermittent drip irrigation on avocado (cv. Fuerte) fruit yield and trunk growth.
Adato, I.; Levinson, B.
Ashford : Headley Brothers Ltd; 1988 Oct.
The Journal of horticultural science v. 63 (4): p. 675-685; 1988 Oct. Includes references.

Language: English

Descriptors: Israel; Persea AmeRicana; Fruit; Yields; Trunks; Growth; Trickle irrigation; Irrigation scheduling; Yield response functions; Evaporation; Water use efficiency; Water balance

170 NAL Call No: 1.9 P69P
Influence of drip and furrow irrigation on phytophthora root rot of citrus under field and greenhouse conditions.
Feld, S.J.; Menge, J.A.; Stolzy, L.H.
St. Paul, Minn. : American Phytopathological Society; 1990 Jan.
Plant disease v. 74 (1): p. 21-27; 1990 Jan. Includes references.

Language: English

Descriptors: California; Citrus sinensis; Phytophthora nicotianae; Root rots; Soil fungi; Soil moisture; Furrow irrigation; Trickle irrigation; Populations; Growth; Field experimentation; Greenhouse experimentation

171 NAL Call No: 81 M58

The influence of irrigation on cracking of sweet cherries.
Flore, J.
East Lansing, Mich. : The Society; 1984.
Annual report - Michigan State Horticultural Society (114th): p. 208-212; 1984. Includes references.

Language: English

Descriptors: Prunus avium; Fruit cracking; Maturity stage; Mist irrigation; Trickle irrigation

172 NAL Call No: SB1.H6
Influence of plastic mulch and type and frequency of irrigation on growth and yield of bell pepper.
VanDerwerken, J.E.; Wilcox-Lee, D.
Alexandria, Va. : American Society for Horticultural Science; 1988 Dec.
HortScience v. 23 (6): p. 985-988; 1988 Dec. Includes references.

Language: English

Descriptors: Capsicum annuum; Bedding plants; Plastic mulches; Trickle irrigation; Sprinkler irrigation; Crop yield; Fruit; Quality; Irrigation scheduling

173 NAL Call No: 309.9 N216
The influence of row covers and herbicides on the growth and yield of muskmelons in North Carolina.
Motsenbocker, C.E.; Bonanno, A.R.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 366-377; 1986. Includes references.

Language: English

Descriptors: North Carolina; Melons; Rowcrops; Growth rate; Crop yield; Covers; Herbicides; Plastic mulches; Trickle irrigation

174 NAL Call No: 80 AC82
Influence of some irrigation variables on drip irrigated table grape, "Italia cv", in Southern Italy.
Caliandro, A.; Ferrara, E.; Rubino, P.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 189-196; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Italy; Vitis; Cultivars; Irrigation scheduling; Evapotranspiration; Trickle irrigation; Yield response functions

175 NAL Call No: SB1.H6
Influence of supplemental irrigation on development of potatoes in the tropics.
Marutani, M.; Cruz, F.
Alexandria, Va. : American Society for Horticultural Science; 1989 Dec.
HortScience v. 24 (6): p. 920-923; 1989 Dec. Includes references.

Language: English

Descriptors: Solanum tuberosum; Tropical climate; Trickle irrigation; Soil moisture; Crop yield; Tubers; Growth rate; Disease distribution; Yield losses

176 NAL Call No: 80 AC82
Influence of various soil moisture levels on the production and quality of some horticultural crops in a subirrigated greenhouse.
Cereti, C.F.; Acutis, M.; Grignani, C.; Reyneri, A.; Vanzetti, D.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 171-178; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Lactuca sativa; Pisum sativum; Lycopersicon esculentum; Greenhouse experimentation; Irrigation scheduling; Yield response functions; Soil water content; Models

177 NAL Call No: SB950.93.P47 1985
Injection of chemicals for subsurface drip irrigated cotton.
Tollefson, S.
Philadelphia, Pa. : ASTM; 1985.
Pesticide formulations and application systems : fourth symposium : a symposium sponsored by ASTM Committee E-35 on Pesticides, New Orleans, La., 2-3 Nov. 1983 / Thomas M. Kaneko, Larry D. Spicer, editors. p. 98-104; 1985. (ASTM special technical publication ; 875). Includes references.

Language: English

Descriptors: Arizona; Gossypium; Irrigated conditions; Trickle irrigation; Fertirrigation; Nematicides

178 NAL Call No: SB951.P47
Insecticide application and insect control using a drip irrigation delivery system.
Royer, T.A.; Edelson, J.V.; Bogle, C.R.; McCrate, S.
Essex : Elsevier Applied Science Publishers; 1989.
Pesticide science v. 25 (3): p. 231-240; 1989. Includes references.

Language: English

Descriptors: Capsicum annuum; Cucumis melo; Apium graveolens; Insect pests; Insecticide application; Insect control; Application methods; Trickle irrigation; Economic evaluation

179 NAL Call No: S605.5.O74
Installing drip irrigation.
Shirley, C.
Emmaus, Pa. : Rodale Press, Inc; 1990 Feb.
Organic gardening v. 37 (2): p. 26-28. ill; 1990 Feb.

Language: English

Descriptors: Trickle irrigation; Domestic gardens

180 NAL Call No: 8 P832J
Integrated weed management in transplanted tomatoes and peppers under drip irrigation.
Liu, L.C.; Antoni-Padilla, M.; Goyal, M.R.; Gonzalez-Ibanez, J.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1987 Oct.
The Journal of agriculture of the University of Puerto Rico v. 71 (4): p. 349-358; 1987 Oct. Includes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Capsicum; Lycopersicon esculentum; Weed control; Integrated control; Herbicides; Manual weed control; Paraquat; Plastic mulches; Yield components; Costs; Farm budgeting; Farm income; Irrigated conditions; Trickle irrigation

181 NAL Call No: SB1.H6
Interactive effects of trickle irrigation rates, cultivars, and culture on cut chrysanthemum.
Harbaugh, B.K.; Stanley, C.D.; Price, J.F.
Alexandria, Va. : American Society for Horticultural Science; 1986 Feb.
HortScience v. 21 (1,section 1): p. 94-95; 1986 Feb. Includes references.

Language: English

Descriptors: Chrysanthemum; Cut-flower production; Yields; Quality; Responses; Trickle irrigation; Cultivars; Pinching; Water requirements; Water uptake

182 NAL Call No: 421 J822
Introduction of entomogenous nematodes into trickle irrigation systems to control striped cucumber beetle (Coleoptera: Chrysomelidae).
Reed, D.K.; Reed, G.L.; Creighton, C.S.
College Park, Md. : Entomological Society of America; 1986 Oct.
Journal of economic entomology v. 79 (5): p. 1330-1333; 1986 Oct. Includes references.

Language: English

Descriptors: Indiana; Vegetables; Coleoptera; Neoaplectana carpocapsae; Nematoda; Parasites of insect pests; Biological control; Trickle irrigation; Application methods

183 NAL Call No: SD436.K4A2
Irrigation.
Appleton, B.L.
Lexington, Ky. : The Service; 1986 Apr.
FOR - Kentucky University, Cooperative Extension Service (25): 2 p. ill; 1986 Apr. In subseries: Kentucky Christmas Tree Production Workbook.

Language: English

Descriptors: Christmas trees; Trickle irrigation; Overhead irrigation; Mobile irrigation systems

184 NAL Call No: SB1.H6
Irrigation and fertilization management of cut chrysanthemums.
Harbaugh, B.K.; Stanley, C.D.; Price, J.F.; Jones, J.B.
Alexandria, Va. : American Society for Horticultural Science; 1989 Feb.
HortScience v. 24 (1): p. 150; 1989 Feb. Includes references.

Language: English

Descriptors: Chrysanthemum; Cut-flower production; Overhead irrigation; Trickle irrigation; Fertirrigation; Crop yield; Crop quality

185 NAL Call No: 275.29 G29B
Irrigation for lawns & gardens.
Tyson, A.; Harrison, K.
Athens, Ga. : The Service; 1987 Jun.
Bulletin - Cooperative Extension Service, University of Georgia, College of Agriculture v.): 19 p. ill; 1987 Jun.

Language: English

Descriptors: Georgia; Sprinkler irrigation; Trickle irrigation

186 NAL Call No: FICHE S-72
Irrigation for mushroom production.
Lomax, K.M.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-4058): 8 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Agaricus bisporus; Cultivation; Performance; Design

187 NAL Call No: 4 AM34P
Irrigation method and water quality effect on peanut yield and grade.
Adamsen, F.J.
Madison, Wis. : American Society of Agronomy; 1989 Jul.
Agronomy journal v. 81 (4): p. 589-593; 1989 Jul. Includes references.

Language: English

Descriptors: Virginia; Arachis hypogaea; Sprinkler irrigation; Trickle irrigation; Subsurface irrigation; Wells; Sodium; Water composition and quality; Irrigation water; Crop yield; Crop quality

Abstract: Peanut (Arachis hypogaea L.), irrigated only recently in the coastal plain region of Virginia and North Carolina, is produced in an area where sodic deep water sources are more readily available than high quality shallow water sources. The objective of this work was to determine the effect of irrigation water qualtiy and irrigation method on the yield and grade of peanut. Virginia-type peanuts (cv. VA 81B) were grown on a Kenansville loamy sand (loamy, siliceous, thermic Arenic Hapludult) in Suffolk, VA from 1984 to 1987. Peanuts were irrigated with either overhead sprinklers or deep buried trickle lines using deep-well (142 m) and shallow-well (10 m) water. Trickle lines were buried 350 to 410 mm below each row. Deep-well water had 220 mg Na L-1, a pH of 8.5, and a sodium adsorption ratio (SAR) of 103. Shallow-well water had 4.8 mg Na L-1, a pH of 4.8, and an SAR of 3.1. Shallow-well, trickle-irrigated peanuts yielded 5003 kg ha-1 or 14% higher than the nonirrigated treatment. Deep-well, sprinkler-irrigated peanuts averaged 4374 kg ha-1 for 4 yr, which was 21 kg ha-1 lower than the non-irrigated treatment. The price of deep-well, sprinkler-irrigated peanuts was also lower than all other treatments due to lower percentages of extra-large kernels, total sound mature kernels, and fancy pods. Deep-well water applied below 300 mm through trickle irrigation produced peanuts of comparable quality and quantity as the shallow-well, trickle, or sprinkler-irrigation treatments. Irrigation of peanuts was beneficial in this humid region. There was no difference in peanut yield or grade when sprinkler or trickle irrigation was used with good quality irrigation water, but trickle irrigation required only 44% as much water. With a sodic water source, trickle irrigation was superior to sprinkler application.

188 NAL Call No: 275.29 W27P
Irrigation of hop.
Evans, R.G.
Pullman, Wash. : The Service; 1985 Nov.
Extension bulletin - Washington State University, Cooperative Extension Service (1328): p. 8-10. ill; 1985 Nov.

Language: English

Descriptors: Humulus lupulus; Irrigation systems; Trickle irrigation

189 NAL Call No: SB1.H6
Irrigation scheduling for young highbush blueberry plants in Arkansas.
Byers, P.L.; Moore, J.N.
Alexandria, Va. : American Society for Horticultural Science; 1987 Feb.
HortScience v. 22 (1): p. 52-54; 1987 Feb. Includes references.

Language: English

Descriptors: Arkansas; Vaccinium corymbosum; Ir-

rigation scheduling; Trickle irrigation; Yields; Berries; Chemical composition; Growth

190 NAL Call No: SB249.N6
Irrigation termination timing effects on cotton yields in the humid south.
Pringle, H.C. III; Tupper, G.R.; Pennington, D.A.; Neill, S.W.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1987.
Proceedings - Beltwide Cotton Production Research Conferences. p. 487-490; 1987. Includes references.

Language: English

Descriptors: Mississippi; Gossypium; Lint; Crop yield; Sprinkler irrigation; Trickle irrigation

191 NAL Call No: S494.5.W3A3
Irrigation with brackish water under desert conditions. V. Nitrogen requirement of tomatoes (Lycopersicon esculentum Mill.) during germination under drip irrigation.
Pasternak, D.; Zohar, Y.; De Malach, Y.; Borovic, I.; Twersky, M.
Amsterdam : Elsevier Scientific; 1986 Sep.
Agricultural water management v. 11 (3/4): p. 313-318; 1986 Sep. Includes references.

Language: English

Descriptors: Israel; Lycopersicon esculentum; Trickle irrigation; Irrigation water; Brackish water; Germination; Nitrogen; Nutrient requirements; Growth; Deserts; Leaching

192 NAL Call No: 80 AM371
Israeli efficiency: Israel's efficient production techniques may make its farmers the best in the world.
Davis, E.D.
Chicago, Ill. : American Nurseryman Publishing Company; 1989 Jul01.
American nurseryman v. 170 (1): p. 121-122; 1989 Jul01.

Language: English

Descriptors: Israel; Plant production; Trickle irrigation; Technical progress; Production structure; Cut-flower production

193 NAL Call No: SB1.H6
K and N fertilization rates influence susceptibility of trickle-irrigated tomato plants to bacterial spot.
Jones, J.B.; Stanley, C.D.; Csizinszky, A.A.; Kovach, S.P.; McGuire, R.G.
Alexandria, Va. : American Society for Horticultural Science; 1988 Dec.
HortScience v. 23 (6): p. 1013-1015; 1988 Dec.

Language: English

Descriptors: Lycopersicon esculentum; Plant diseases; Xanthomonas campestris; Susceptibility; Potassium fertilizers; Nitrogen fertilizers; Trickle irrigation; Correlated traits; Leaf analysis; Nitrogen content

194 NAL Call No: 8 P832J
Labor-input requirements for experimental production of drip irrigated vegetables.
Goyal, M.R.; Persaud, T.; Rivera, L.E.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1988 Jan.
The Journal of agriculture of the University of Puerto Rico v. 72 (1): p. 41-50; 1988 Jan.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Trickle irrigation; Vegetables; Labor requirements

195 NAL Call No: 293.8 SE8
Land application of wastewater.
Zirschky, J.; Abernathy, A.R.
Alexandria, Va. : The Federation; 1987.
Journal - Water Pollution Control Federation v. 59 (6): p. 431-432; 1987. Includes references.

Language: English

Descriptors: Land improvement; Waste water disposal; Trickle irrigation

196 NAL Call No: 80 AC82
Leaf osmotic potential and osmotic adjustment of apricot, under different water regimen during the years of establishment.
Ruggiero, C.; Angeloro, P.; Magliulo, V.; Busiello, F.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 281-290; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Italy; Prunus armeniaca; Leaf water potential; Osmosis; Measurement; Irrigation

scheduling; Turgor; Pressure; Sprinkler irrigation; Trickle irrigation

197 NAL Call No: 4 AM34P
Lettuce yield-irrigation water quality and quantity relationships in a gypsiferous desert soil.
Russo, D.
Madison, Wis. : American Society of Agronomy; 1987 Jan.
Agronomy journal v. 79 (1): p. 8-14; 1987 Jan. Includes references.

Language: English

Descriptors: Israel; Lactuca sativa; Crop yield; Irrigation water; Water composition and quality; Irrigation scheduling; Trickle irrigation; Soil water content; Salinity; Gypsiferous soils; Desert soils; Arid Zones; Salt tolerance

198 NAL Call No: 290.9 AM32T
Linearized water application function for drip irrigation schedules.
Wu, I.P.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1988 Dec.
Transactions of the ASAE v. 31 (6): p. 1743-1749; 1988 Dec. Includes references.

Language: English

Descriptors: Trickle irrigation; Irrigation scheduling; Frequency distribution; Irrigation requirements

199 NAL Call No: FICHE S-72
Linearized water application function for drip irrigation schedules.
Wu, I.P.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2035): 25 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Irrigation scheduling; Mathematics; Optimization

200 NAL Call No: SB319.2.F6F56
Lysimeters for crop water use determinations under high water table conditions.
Vellidids, G.; Smajstrla, A.G.; Zazueta, F.S.
S.l. : The Society; 1988 Aug.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 100: p. 256-260. ill; 1988 Aug. Includes references.

Language: English

Descriptors: Lysimeters; Trickle irrigation; Water table; Soil water potential; Crops; Water use; Microcomputers; Evapotranspiration; Instrumentation

201 NAL Call No: 81 M58
Maintenance tips for trickle irrigation.
Spaulding, W.J. Sr
East Lansing, Mich. : The Society; 1987.
Annual report - Michigan State Horticultural Society (117th): p. 83-88; 1987.

Language: English

Descriptors: Orchards; Trickle irrigation; Maintenance; Filters; Pumps

202 NAL Call No: FICHE S-72
Measurement of head loss in a subirrigation system.
Bournival, P.; Prasher, S.; Broughton, R.S.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2099): 16 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Subsurface irrigation; Irrigation water; Losses; Measurement

203 NAL Call No: 290.9 AM32T
Measurements of head losses in a subirrigation system.
Bournival, P.; Prasher, S.; Von Hoyningen Huene, B.; Broughton, R.S.
St. Joseph, Mich. : The Society; 1987 Jan.
Transactions of the ASAE - American Society of Agricultural Engineers v. 30 (1): p. 183-186; 1987 Jan. Includes references.

Language: English

Descriptors: Irrigation systems; Sandy loam soils; Drainage

204 NAL Call No: 290.9 AM3PS (IR)
Mechanisms and process parameters of filter screens.
Adin, A.; Alon, G.
New York, N.Y. : American Society of Civil Engineers; 1986 Nov.
Journal of irrigation and drainage engineering v. 112 (4): p. 293-304; 1986 Nov. Includes references.

Language: English

Descriptors: Trickle irrigation; Filters; Filtration

205 NAL Call No: 290.9 AM32T
Mechanisms by which surge irrigation reduces furrow infiltration rates in a silty loam soil.
Kemper, W.D.; Trout, T.J.; Humpherys, A.S.; Bullock, M.S.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1988 May.
Transactions of the ASAE v. 31 (3): p. 821-829. ill; 1988 May. Includes references.

Language: English

Descriptors: Furrow irrigation; Border irrigation; Infiltration; Loam soils; Erosion

206 NAL Call No: SB1.H6
Method for changing water application rates in trickle irrigation research plots.
Lasswell, J.L.; Worthington, J.W.
Alexandria, Va. : American Society for Horticultural Science; 1988 Apr.
HortScience v. 23 (2): p. 403. ill; 1988 Apr.

Language: English

Descriptors: Trickle irrigation; Irrigation equipment; Irrigation scheduling

207 NAL Call No: 309.9 N216
Methods and scheduling of N and K fertilizer applications for cauliflower.
Wall, T.E.; Hochmuth, G.J.
Peoria, Ill. : National Agricultural Plastics Association; 1989.
Proceedings of the ... National Agricultural Plastics Congress (21st): p. 180-185; 1989. Includes references.

Language: English

Descriptors: Brassica oleracea var. botrytis; Fertilizer application; Nitrogen fertilizers; Potassium fertilizers; Polyethylene film; Plastic mulches; Trickle irrigation

208 NAL Call No: FICHE S-72
A microcomputer simulation package for subirrigation.
Havard, P.; Prasher, S.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2098): 15 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Simulation models; Subsurface irrigation; Irrigation water; Distribution; Microcomputers

209 NAL Call No: 81 W273
Microsprinkler design and management considerations.
Ley, T.W.
Wenatchee, Wash. : The Association; 1987.
Proceedings - Washington State Horticultural Association (83rd): p. 169-175; 1987.

Language: English

Descriptors: Orchards; Trickle irrigation; Design criteria; Water use efficiency; Frost protection

210 NAL Call No: 290.9 AM3PS (IR)
Modeling surge irrigation infiltration.
Blair, A.W.; Smerdon, E.T.
New York, N.Y. : American Society of Civil Engineers; 1987 Nov.
Journal of irrigation and drainage engineering v. 113 (4): p. 497-516; 1987 Nov. Includes references.

Language: English

Descriptors: Irrigation systems; Models; Infiltration; Design; Soil compaction

211 NAL Call No: HD1775.G4G43

Modified systemic insecticide use strategies for aphid control in irrigated pecan orchards.
Alverson, D.R.
Athens, Ga. : The Stations; 1985 Dec.
Special publication - University of Georgia, Agriculture Experiment Stations (38): p. 31-42. ill; 1985 Dec. In the series analytic: Aphids and phylloxeras of pecan / edited by W.W. Neel, W.L. Tedders, and J.D. Dutcher. Includes references.

Language: English

Descriptors: Georgia; South Carolina; Carya pecan; Irrigated stands; Trickle irrigation; Hemiptera; Systemic action; Insecticide application; Graphs; Charts; Aldicarb; Carbofuran

212 **NAL Call No: S539.5.J62**
Moisture profiles and salinization of soil under drip irrigation.
Abdel-Aziz, M.H.; Badr, A.A.
Riyadh, Saudi Arabia : University Libraries, King Saud University; 1980.
Journal of the College of Agriculture, King Saud University v. 2: p. 3-23; 1980. Includes references.

Language: English (Summary in Arabic)

Descriptors: Citrullus lanatus; Soil moisture; Soil salinization; Trickle irrigation

213 **NAL Call No: FICHE S-72**
Moisture uptake patterns of non-irrigated and trickle-irrigated peach roots.
Armstrong, C.F.; Ligon, J.T.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2126): 40 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Literature review. Includes references.

Language: English

Descriptors: South Carolina; Prunus persica; Roots; Water uptake; Soil moisture; Soil profiles; Trickle irrigation

214 **NAL Call No: SB249.N6**
Monograph: irrigation frequency with drip irrigation and its effect on yield.
Henggeler, J.C.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 79-80; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana. Includes references.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Irrigation scheduling; Crop yield; Lint

215 **NAL Call No: S539.5.J62**
Movement and distribution of wate in soil profiles under different flow rates from a trickle source.
Abdel-Aziz, M.H.; Hazrat, M.S.
Riyadh, Saudi Arabia : University Libraries, King Saud University; 1982.
Journal of the College of Agriculture, King Saud University v. 4: p. 157-173; 1982. Includes references.

Language: English (Summary in Arabic)

Descriptors: Soil profiles; Soil water movement; Trickle irrigation; Infiltration

216 **NAL Call No: 81 SO12**
Mulch and irrigation placement effects on soil chemistry properties and rabbiteye blueberry plants irrigated with sodic water.
Patten, K.D.; Neuendorff, E.W.; Leonard, A.T.; Haby, V.A.
Alexandria, Va. : The Society; 1988 Jan.
Journal of the American Society for Horticultural Science v. 113 (1): p. 4-8; 1988 Jan. Includes references.

Language: English

Descriptors: Texas; Louisiana; Vaccinium ashei; Trickle irrigation; Mulching; Saline water; Soil chemistry; ElectRical conductivity

217 **NAL Call No: 8 P832J**
Mulch types for soil moisture retention in drip irrigated summer and winter peppers.
Rivera, L.E.; Goyal, M.R.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1986 Oct.
The Journal of agriculture of the University of Puerto Rico v. 70 (4): p. 303-305; 1986 Oct. Includes references.

Language: English

Descriptors: Puerto Rico; Capsicum; Mulches; Soil moisture; Soil water retention; Irrigated condi-

tions; Trickle irrigation

218 **NAL Call No: 8 P832J**
Mulch types on soil temperature at varying depths in drip irrigated summer and winter peppers.
Rivera, L.E.; Goyal, M.R.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1985 Jan.
The Journal of agriculture of the University of Puerto Rico v. 69 (1): p. 121-123; 1985 Jan. Includes references.

Language: English

Descriptors: Puerto Rico; Capsicum; Mulches; Plastic mulches; Soil temperature

219 **NAL Call No: SB1.H6**
Muskmelon production under mulch and trickle irrigation in the Jordan Valley.
Battikhi, A.M.; Ghawi, I.
Alexandria, Va. : American Society for Horticultural Science; 1987 Aug.
HortScience v. 22 (4): p. 578-581; 1987 Aug. Includes references.

Language: English

Descriptors: Jordan; Cucumis melo; Trickle irrigation; Plastic mulches; Yields; Irrigation requirements

220 **NAL Call No: 309.9 N216**
New developments in row crop drip/trickle irrigation.
Hall, B.J.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 65-71; 1986. Includes references.

Language: English

Descriptors: Trickle irrigation; Rowcrops; Crop production

221 **NAL Call No: S590.C63**
Nitrogen fertigation of greenhouse-grown French beans.
Papadopoulos, I.
New York, N.Y. : Marcel Dekker; 1986 Sep.
Communications in soil science and plant analysis v. 17 (9): p. 893-903; 1986 Sep. Includes references.

Language: English

Descriptors: Phaseolus vulgaris; Greenhouse crops; Fertirrigation; Trickle irrigation; Nitrogen fertilizers; Nitrogen recovery; Soil salinity; Crop yield

222 **NAL Call No: S590.C63**
Nitrogen fertigation of greenhouse-grown tomato.
Papadopoulos, I.
New York, N.Y. : Marcel Dekker; 1987 Aug.
Communications in soil science and plant analysis v. 18 (8): p. 897-907; 1987 Aug. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Fertirrigation; Nitrogen; Greenhouse experimentation; Crop yield; Nitrogen residual effects; Soil salinity; Trickle irrigation

223 **NAL Call No: S631.F422**
Nitrogen fertigation of trickle-irrigated potato.
Papadopoulos, I.
Dordrecht : Kluwer Academic Publishers; 1988 May.
Fertilizer research : an international journal on fertilizer use and technology v. 16 (2): p. 157-167; 1988 May. Includes references.

Language: English

Descriptors: Solanum tuberosum; Trickle irrigation; Nitrogen fertilizers; Fertirrigation; Vertisols; Leaf analysis

224 **NAL Call No: 56.9 SO3**
Nitrogen transport during drip fertigation with urea.
Clothier, B.E.; Sauer, T.J.
Madison, Wis. : The Society; 1988 Mar.
Soil Science Society of America journal v. 52 (2): p. 345-349. ill; 1988 Mar. Includes references.

Language: English

Descriptors: Ammonium nitrate; Urea; Nitrogen; Nutrient transport; Movement in soil; Trickle irrigation; Adsorption; Ph; Mathematical models; Fertirrigation

225 **NAL Call No: 64.8 C883**
Nitrogen-potassium fertilization and soil moisture effects on growth and development of drip-irrigated sugarcane.
Ingram, K.T.; Hilton, H.W.
Madison, Wis. : Crop Science Society of America; 1986 Sep.
Crop science v. 26 (5): p. 1034-1039; 1986 Sep. In-

cludes references.

Language: English

Descriptors: Saccharum; Hybrids; Nitrogen fertilizers; Potassium fertilizers; Soil moisture; Growth analysis; Plant development; Leaf area; Light intensity; Water relations; Dry matter; Trickle irrigation

226 NAL Call No: 80 AC82

A note on the IH-MSIRI drip irrigation research project.

Batchelor, C.H.; Wellings, S.R.; Soopramanien, G.C.

Wageningen : International Society for Horticultural Science; 1985 Jun.

Acta horticulturae (153): p. 407-413. maps; 1985 Jun. Presented at the Ninth African Symposium on Horticultural Crops, Mahe, Seychelles, July 27-29, 1983. Includes references.

Language: English

Descriptors: Mauritius; Saccharum; Irrigated farming; Trickle irrigation; Irrigation systems; Soil water balance; Plant water relations; Tropics; Agricultural meteorology

227 NAL Call No: 81 SO12

Ntrogen fertilizer management practices to enhance seed production by 'Anaheim Chili' peppers.

Payero, J.O.; Bhangoo, M.S.; Steiner, J.J.

Alexandria, Va. : The Society; 1990 Mar.

Journal of the American Society for Horticultural Science v. 115 (2): p. 245-251; 1990 Mar. Includes references.

Language: English

Descriptors: Capsicum annuum; Cultivars; Seed crops; Nitrogen fertilizers; Application; Frequency; Application date; Developmental stages; Fertirrigation; Trickle irrigation; Yield response functions; Crop quality

Abstract: The effects of six applied N treatments differing by rates and frequencies of application on the yield and quality of pepper (Capsicum annuum var. annuum L. 'Anaheim Chili') grown for seed was studied. The timing of N applications was based on crop phenology, leaf petiole nitrate-nitrogen concentrations (NO3-N) minimum thresholds, and scheduled calendar applications of fixed amounts of N. Solubilized NH4NO3 was applied through a trickle-irrigation system to ensure uniform and timely applications of N. Rate of mature (green and red) fruit production was unaffected by any treatment except weekly applications of 28 kg.ha-1 of N, which stopped production of mature fruit before all other treatments. Early season floral bud and flower production increased with increasing amounts of N. The two highest total N treatments produced more floral buds and flowers late in the season than the other treatments. Total fruit production was maximized at 240 kg N/ha. Differences in total fruit production due to frequency of N application resulted at the highest total N level. Red fruit production tended to be maximized with total seasonal applied N levels of 240 kg.ha-1 and below, although weekly applications of N reduced production. Total seed yield was a function of red fruit production. Pure-live seed (PLS) production was a function of total seed production. Nitrogen use efficiency (NUE) for red fruit production also decreased with N rates >240 kg.ha-1, but PLS yield and NUE decreased in a near-linear fashion as the amount of total seasonal applied N increased, regardless of application frequency. Season average NO3-N (AVE NO3-N) values >4500 mg.kg-1 had total seed and PLS yields less than those treatments <4000 mg.kg-1. Six-day germination percentage was reduced with weekly N applications of 14 kg.ha-1. Seed mass was reduced with weekly N applications of 28 kg.ha-1. Final germination percent, seedling root length and weight, and field emergence were unaffected by any of the N tre

228 NAL Call No: 80 AC82

Nutrient solutions-substrates (rockwool and peat) interactions in drip-irrigation with highly saline waters.

Cadahia, C.; Masaguer, A.; Garate, A.; Sarro, M.J.

Wageningen : International Society for Horticultural Science; 1988 Jul.

Acta horticulturae (222): p. 173-178; 1988 Jul. In the series analytic: Fertilization of vegetables under protected cultivation / edited by A. van Diest. Proceedings of the Symposium. April 6-10, 1987, Naaldwijk, Netherlands. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Capsicum annuum; Nutrient solutions; Trickle irrigation; Saline water; Rockwool; Peat; Interactions; Nutrient removal by plants; Crop yield

229 NAL Call No: 8 P832J

Nutrient uptake and solute movement in drip ir-

rigated summer peppers.
Santiago, C.L.; Goyal, M.R.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1985 Jan.
The Journal of agriculture of the University of Puerto Rico v. 69 (1): p. 63-68; 1985 Jan. Includes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Capsicum; Nutrient uptake; Fertirrigation; Transport processes in soil systems; Trickle irrigation

230 **NAL Call No: 81 SO12**
Nutrition and yield of young apple trees irrigated with municipal waste water.
Neilsen, G.H.; Stevenson, D.S.; Fitzpatrick, J.J.; Brownlee, C.H.
Alexandria, Va. : The Society; 1989 May.
Journal of the American Society for Horticultural Science v. 114 (3): p. 377-383; 1989 May. Includes references.

Language: English

Descriptors: British Columbia; Malus pumila; Waste waters; Waste utilization; Sewage effluent; Irrigation water; Trickle irrigation; Nitrogen fertilizers; Nutrient removal by plants; Leaf analysis; Nitrogen; Phosphorus; Potassium; Crop yield; Fruit

Abstract: 'Macspur McIntosh' and 'Red Chief Delicious' apple (Malus domestica Borkh.) on M.7a rootstock were subjected to treatments involving all combinations of two types of irrigation water (well-water or municipal effluent) from 1983, the year of planting, through 1987 and three rates of N fertilization (0, 200, 400 g NH4NO3/tree per year), from 1984 through 1987. The zero N treatment was increased to 100 g NH4NO3/tree per year in 1986 due to low vigor of these trees. Effluent irrigation increased leaf N, P, and K concentration in 4 of 5 years for 'McIntosh', while leaf N, P, and K increased in 1, 4, and 2 years, respectively, for 'Delicious'. Effluent irrigation increased trunk diameter increment in all years and fruit number and yield in 1985-86 for both cultivars. No major horticultural limitations to the use of effluent irrigation were observed. Nitrogen fertilization increased leaf N in 3 years for 'McIntosh' and 2 years for 'Delicious', while leaf P and K were decreased at the highest N rate in 2 years for each cultivar. Nitrogen fertilization did not increase trunk diameter and increased fruit number and yield only in 1986 after 3 years of a zero N treatment. The results implied a role for P in the establishment and early growth and yield of young apple trees.

231 **NAL Call No: QK867.J67**
Nutrition of cole crops with the full-bed polyethylene mulch system in west-central Florida.
Csizinszky, A.A.
New York, N.Y. : Marcel Dekker; 1987.
Journal of plant nutrition v. 10 (9/16): p. 1489-1497; 1987. Paper presented at the "Tenth International Plant Nutrition Colloquium," August 4-9, 1986, Beltsville, Maryland. Includes references.

Language: English

Descriptors: Florida; Brassica oleracea var. italica; Brassica oleracea var. capitata; Brassica oleracea var. botrytis; Plastic mulches; Polyethylene; Plant nutrition; Fertilizers; Application methods; Trickle irrigation; Seepage

232 **NAL Call No: 56.9 SO3**
Optimal design of field experiments for determination of production functions.
Hendrickx, J.M.H.; Wierenga, P.J.; Urquhart, N.S.
Madison, Wis. : The Society; 1988 Mar.
Soil Science Society of America journal v. 52 (2): p. 494-499; 1988 Mar. Includes references.

Language: English

Descriptors: Capsicum annuum; Trickle irrigation; Water use; Field experimentation; Experimental design; Experimental plots; Production functions; Mathematical models

233 **NAL Call No: 56.9 SO3**
Optimal prediction of saturation and wetting fronts during trickle irrigation.
Lockington, D.; Parlange, J.Y.; Surin, A.
Madison, Wis. : The Society; 1984 May.
Soil Science Society of America journal v. 48 (3): p. 488-494; 1984 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Diffusion models; Wetting front; Saturated conditions; Prediction; Point source; Optimization

234 **NAL Call No: S619.T74O6**
Optimization of water by automated drip irrigation control for apple trees.
Assaf, R.
United States-Israel Binational Agricultural Re-

search and Development Fund
Bet Dagan, Israel : BARD; 1989.
49 leaves : ill. ; 29 cm. Final report. Project no. I-1123-86. Includes bibliographical references.

Language: English

Descriptors: Apple--Irrigation; Trickle irrigation; Water consumption

235 NAL Call No: 290.9 AM3PS (IR)
Particle filtration for wastewater irrigation.
Adin, A.; Elimelech, M.
New York, N.Y. : American Society of Civil Engineers; 1989 Jun.
Journal of irrigation and drainage engineering v. 115 (3): p. 474-487; 1989 Jun. Includes references.

Language: English

Descriptors: Waste waters; Irrigation systems; Filtration; Trickle irrigation; Effluents

236 NAL Call No: FICHE S-72
Particles influence hydraulics of porous tubing.
Lomax, K.M.; Wood, J.D.; Guacelli, F.S.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2097): 10 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Mathematics; Trickle irrigation; Pores; Tubes; Pressure; Emission; Responses

237 NAL Call No: 100 N465R
Pecan tree growth, yield and physiology as affected by different irrigation levels.
Riley, W.R.; Lugg, D.G.; Sammis, T.W.
Las Cruces, N.M. : The Station; 1986 Sep.
Research report - New Mexico University, College of Agriculture and Home Economics, Agricultural Experiment Station (591): 9 p.; 1986 Sep. Includes references.

Language: English

Descriptors: New Mexico; Carya pecan; Trickle irrigation; Crop yield; Diameter; Canopy

238 NAL Call No: 309.9 N216
Pepper and muskmelon economics when grown with plastic mulch and drip irrigation.
Sanders, D.C.; Konsler, T.R.; Lamont, W.J.; Estes, E.A.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 302-313; 1986. Includes references.

Language: English

Descriptors: Capsicum; Melons; Plastic mulches; Trickle irrigation

239 NAL Call No: SB960.P4
Pestigation via trickle systems.
Goyal, Megh Raj
Puerto Rico? : s.n., [1984?]; 1984.
41 p. : ill. ; 28 cm. Caption title. Paper ... presented at Symposium on "Advances in Pesticide Application Technology" sponsored by American Chemical Society held at Philadelphia, PA during August 29-30, 84. Study conducted under project H-326. Bibliography: p. 15.

Language: English

Descriptors: Pesticides--Application; Trickle irrigation; Agricultural chemicals

240 NAL Call No: aS21.A8U5/ARS
Photosynthesis and leaf water potential of cotton under trickle and level basin irrigation.
Allen, S.G.; Bucks, D.A.; Dierig, D.A.
Washington, D.C. : The Service; 1986 Mar.
Reprints - U.S. Department of Agriculture, Agricultural Research Service [184]: p. 159-161; 1986 Mar.

Language: English

Descriptors: Arizona; Gossypium; Leaf water potential; Photosynthesis; Trickle irrigation; Irrigation scheduling

241 NAL Call No: TJ810.A54
Photovoltaic drip irrigation.
Girard, K.
Boulder, Colo. : The Society; 1988.
Proceedings of the ... Annual Meeting, American Solar Energy Society, Inc. p. 165-170; 1988. In the series analytic: Solar '88 / edited by M.J. Coleman. Proceedings of an annual meeting, June 20-24, 1988, Cambridge, Massachusetts. Includes refer-

ences.

Language: English

Descriptors: Trickle irrigation; Projects; Pumps; Photovoltaic cells

242 NAL Call No: SB245.B42
The phytogram network.
Gensler, W.; Kanto, V.A.
Memphis : National Cotton Council; 1987.
Proceedings of the...Beltwide Cotton Production Conference. p. 126-128. ill; 1987. Includes references.

Language: English

Descriptors: Arizona; Gossypium; Crops; Status; Remote sensing; Irrigation requirements; Trickle irrigation; Furrow irrigation; Varieties; Responses

243 NAL Call No: 80 J825
Plant water relations, canopy temperature, yield and water-use efficiency of watermelon Citrullus lanatus (Thunb.) Matsum et Nakai under drip and furrow irrigation.
Srinivas, K.; Hedge, D.M.; Havanagi, G.N.
Ashford : Headley Brothers Ltd; 1989 Jan.
The Journal of horticultural science v. 64 (1): p. 115-124; 1989 Jan. Includes references.

Language: English

Descriptors: Citrullus lanatus; Trickle irrigation; Furrow irrigation; Plants; Water content; Yield response functions; Water use efficiency; Canopy; Temperature

244 NAL Call No: SB126.5.H94
Plastics and plastic products.
Garnaud, J.C.
Honolulu, Hawaii, USA : International Center for Special Studies; 1985.
Hydroponics worldwide : state of the art in soilless crop production / Adam J. Savage, editor. p. 31-35. ill; 1985.

Language: English

Descriptors: Hydroponics; Plastic film; Greenhouses; Greenhouse crops; Plant production; Trickle irrigation

245 NAL Call No: FICHE S-72
Plugging evaluation for a drip irrigation submain unit.
Wu, I.P.; Irudayaraj, J.M.; Feng, J.S.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2062): 15 p.; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Performance appraisals; Emitters; Flow; Simulation models; Computers

246 NAL Call No: 8 P832J
Post-harvest evaluation of nitrogen fertigated sweet peppers under drip irrigation and plastic mulch.
Goyal, M.R.; Guadalupe-Luna, R.; Hernandez, E.R. de; Chao de Baez, C.
Rio Piedras, R.R. : University of Puerto Rico, Agricultural Experiment Station; 1989 Apr.
The Journal of agriculture of the University of Puerto Rico v. 73 (2): p. 109-114; 1989 Apr.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Capsicum; Crop quality; Fertirrigation; Nitrogen fertilizers; Plastic mulches; Trickle irrigation; Yield components

247 NAL Call No: TC823.P52
Potassium fertigation in drip irrigated peppers in Puerto Rico.
Goyal, M.R.; Rivera, L.E.
New York, N.Y. : The Society; 1988.
Planning now for irrigation and drainage in the 21st century : proc of a conference : Lincoln, Nebraska, July 18-21, 1988 / sponsored by the Irrig and Drain Div of the American Soc of Civil Engineers ; edited by D.R. Hay. p. 87-90. ill; 1988. Includes references.

Language: English

Descriptors: Puerto Rico; Capsicum; Potassium fertilizers; Fertirrigation; Trickle irrigation

248 NAL Call No: 290.9 AM32T
Predicting sediment deposition patterns in pipes with diminishing flow.
James, L.G.; King, B.A.
St. Joseph, Mich. : The Society; 1984 Nov.
Transactions of the ASAE - American Society of

Agricultural Engineers v. 27 (6): p. 1758-1762; 1984 Nov. Includes references.

Language: English

Descriptors: Trickle irrigation; Sedimentation; Pipes; Flow constants; Sprinkler irrigation; Models; Transient flow

249 NAL Call No: TC423.W33
Problems to avoid with drip/trickle irrigation systems.
Bucks, D.A.; Nakayama, F.S.
New York : American Society of Civil Engineers; 1984.
Water today and tomorrow : proc. of Specialty Conf. sponsored by Irrigation and Drainage Div. of Am. Soc. Civil Engineers, Flatstaff, Az., July 24-26, 1984 / John A. Replogle and Kenneth G. Renard, Editors. p. 711-720; 1984. Includes references.

Language: English

Descriptors: Trickle irrigation; Design; Water requirements; Fertilizer application

250 NAL Call No: 309.9 N216
Profitability of growing tomatoes with plastic mulch and drip irrigation.
Estes, E.A.; Sanders, D.C.; Konsler, T.R.; Lamont, W.J.
Peoria, Ill. : National Agricultural Plastics Association; 1987.
Proceedings of the ... National Agricultural Plastics Congress v. 20: p. 91-95; 1987. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Plastic mulches; Growth rate; Economic analysis

251 NAL Call No: 80 G85W
Profiting with Concords.
Peyster, D. de
Willoughby, Ohio : Meister Pub. Co; 1988 May.
Western fruit grower v. 108 (5): p. 48.50. ill; 1988 May.

Language: English

Descriptors: New York; Viticulture; Cultural methods; Training (plant); Intensive production; Trickle irrigation; Artificial defoliation; Profitability; Yields

252 NAL Call No: S612.W3
Pulsators for clogged drippers.
Dolinko, M.; Rubinstein, Z.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1987 Jan.
Water & irrigation review. p. 4-5. ill; 1987 Jan.

Language: English

Descriptors: Irrigation equipment; Pulsators; Blockage

253 NAL Call No: TC803.178
Rating curves for adjustable tricklers.
Alajaji, A.; Helweg, O.; Al-Naim, A.; Al-Barrak, S.
New York, N.Y. : ASCE; 1987.
Irrigation systems for the 21st century : proceedings of a conference : Portland, Oregon, July 28-30, 1987 / edited by Larry G. James and Marshall J. English. p. 637-642. ill; 1987. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Pressure gauges; Rating scales

254 NAL Call No: S596.7.A8 1984
Recovery of fertiliser nitrogen from furrow and drip irrigated cotton on clay soil.
Constable, G.A.
Melbourne : CSIRO, [1985?]; 1985.
Root zone limitations to crop production on clay soils : Symposium of the Australian Society of Soil Science Inc. Riverina Branch, Griffith, N.S.W. 25-27 September 1984 / editors: W.A. Muirhead, E. Humphreys. p. 297-303; 1985. Includes references.

Language: English

Descriptors: Clay soils; Gossypium; Nitrogen fertilizers; Nitrogen recovery; Furrow irrigation; Trickle irrigation

255 NAL Call No: FICHE S-72
Regional approach to subirrigation planning.
Belcher, H.W.; Kittleson, K.M.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2547): 10 p. maps; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Michigan; Subsurface irrigation; Water table; Management; Planning

256 NAL Call No: 4 AM34P
Relating calculated leaf area index, evapotranspiration, and irrigation method of sugarcane.
Shih, S.F.
Madison, Wis. : American Society of Agronomy; 1989 Jan.
Agronomy journal v. 81 (1): p. 111-115. ill; 1989 Jan. Includes references.

Language: English

Descriptors: Florida; Saccharum; Subsurface irrigation; Trickle irrigation; Evapotranspiration; Leaf area index; Crop yield; Correlation; Mathematical models

Abstract: The determination of the considerable amount of water used in south Florida for crop production has been time-consuming and expensive. The Standard Class A National Weather Service pan evaporation (SPE) has been used to estimate evapotranspiration (ET), but requires crop coefficients, ET/SPE, which vary with plant development stage, season, leaf area index (LAI), yield, and irrigation method. The objective of this study was to establish relationships among ET, SPE, LAI, yield of plant and two ratoon crops of sugarcane (Saccharum spp.), and two irrigation methods. Lysimeters were used for 3 yr (1980-1982) on a Boca fine sand (loamy, siliceous, hyperthermic Arenic Ochraqualfs). Irrigation methods were drip irrigation and subirrigation systems. Total crop seasonal ET values were 1322 mm for drip irrigation, and 1275 mm for subirrigation. The sugarcane average yield under drip irrigation (143 t/ha) was significantly higher than that under subirrigation (119 t/ha), and was linearly related to the ET. The crop coefficient is curvilinearly related to the LAI. The relationship of ET/SPE to LAI was: 0.649 + 0.185 LAI - 0.025 LAI2 (R2 = 0.77) for both irrigation methods. The relationship of ET/SPE to LAI of the second ratoon under subirrigation was: 0.599 + 0.089 LAI - 0.011 LAI2 (R2 = 0.87).

257 NAL Call No: 309.9 N216
Relative costs and returns for trickle irrigated vegetable crops.
Dhillon, P.S.
Peoria, Ill. : National Agricultural Plastics Association; 1981.
Proceedings of the ... National Agricultural Plastics Congress (16th): p. 169-176; 1981. Includes references.

Language: English

Descriptors: New Jersey; Lycopersicon esculentum; Capsicum; Solanum melongena; Cucumis melo; Trickle irrigation; Crop yield; Production costs; Returns

258 NAL Call No: S604.5.B43
Report on a tour overseas to California, England, France and Israel with particular reference to soil management in vineyards and orchards, frost control measures, XXII International Horticultural Congress, pistachio growing, walnut growing, hydroponics, and, drip irrigation in Israel : 2nd August - 8th September, 1986.
Beckingham, Clarrie
New South Wales, Dept. of Agriculture
Maitland : N.S.W. Dept. of Agriculture? 1986?; 1986.
152 p. : ill., maps ; 30 cm. Cover title.

Language: English

Descriptors: Vineyards; Orchards; Trickle irrigation--Israel

259 NAL Call No: S590.C63
Response of banana to drip irrigation, water amounts and fertilization regimes.
Lahav, E.; Kalmer, D.
New York, N.Y. : Marcel Dekker; 1988.
Communications in soil science and plant analysis v. 19 (1): p. 25-46; 1988. Includes references.

Language: English

Descriptors: Israel; Musa; Trickle irrigation; Water requirements; Fertilizer application; Evaporation

260 NAL Call No: 309.9 N216
Response of bell pepper to raised beds, black plastic mulch, spunbonded row cover and trickle irrigation.
Call, R.E.; Courter, J.W.
Peoria, Ill. : National Agricultural Plastics Association; 1989.
Proceedings of the ... National Agricultural Plastics Congress (21st): p. 140-146; 1989. Includes references.

Language: English

Descriptors: Capsicum annuum; Plastic mulches;

Color; Covers; Sprinkler irrigation

261 NAL Call No: S612.I756
Response of cotton to treated domestic wastewater applied through trickle irrigation.
Oron, G.; DeMalach, Y.
Berlin, W. Ger. : Springer International; 1987.
Irrigation science v. 8 (4): p. 291-300. ill; 1987. Includes references.

Language: English

Descriptors: Israel; Gossypium hirsutum; Trickle irrigation; Waste water disposal; Crop yield; Row spacing; Arid Zones; Irrigation scheduling

262 NAL Call No: 80 J825
Response of leaf water potential to estimated transpiration in almond trees.
Torrecillas, A.; Ruiz-Sanchez, M.C.; Hernansaez, A.
Ashford : Headley Brothers Ltd; 1989 Nov.
The Journal of horticultural science v. 64 (6): p. 667-671; 1989 Nov. Includes references.

Language: English

Descriptors: Prunus amygdalus; Trickle irrigation; Leaf water potential; Measurement; Transpiration; Water stress; Stomata

263 NAL Call No: SB319.2.F6F56
Response of 'Marsh' grapefruit trees to drip, under tree spray and sprinkler irrigation.
Koo, R.C.J.
s.l. : The Society; 1986.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 98: p. 29-32; 1986. Includes references.

Language: English

Descriptors: Florida; Citrus paradisi; Trickle irrigation; Sprinkler irrigation; Responses; Yields; Juice quality; Growth

264 NAL Call No: 56.9 SO32
Response of two tomato cultivars to irrigation systems, fertilizer sources and plant spacings for three consecutive seasons.
Csizinszky, A.A.; Stanley, C.D.; Overman, A.J.
S.l. : The Society; 1987.
Proceedings - Soil and Crop Science Society of Florida v. 46: p. 1-4; 1987. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Liquid fertilizers; Spacing; Cultivars

265 NAL Call No: 80 J825
The response of young almond trees to different drip-irrigated conditions. Development and yield.
Torrecillas, A.; Ruiz-Sanchez, M.C.; Leon, A.; Del Amor, F.
Ashford : Headley Brothers Ltd; 1989 Jan.
The Journal of horticultural science v. 64 (1): p. 1-7; 1989 Jan. Includes references.

Language: English

Descriptors: Prunus amygdalus; Trickle irrigation; Irrigation scheduling; Evaporation; Water stress; Crop yield; Plant development; Crop quality; Transpiration; Leaf water potential; Canopy; Leaf area

266 NAL Call No: SB1.H6
Responses of vegetable crops to surface and subsurface drip irrigation.
Garrett, J.T.; Camp, C.R.; Sadler, E.J.; Busscher, W.J.
Alexandria, Va. : American Society for Horticultural Science; 1989 Oct.
HortScience v. 24 (5): p. 761; 1989 Oct. Includes abstract.

Language: English

Descriptors: South Carolina; Cucumis melo; Pisum sativum; Phaseolus vulgaris; Trickle irrigation; Crop yield; Loam soils; Sandy soils

267 NAL Call No: FICHE S-72
Ring-infiltrometer measures 1-D and 3-D infiltration.
Fok, Y.; Chiang, S.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2006): 11 p. ill; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Mathematics; Surface irrigation; Trickle irrigation; Water; Infiltration; Infiltrometers

268 NAL Call No: 81 SO12
Root distribution of 'Climax' rabbiteye blueberry as affected by mulch and irrigation geometry.
Patten, K.D.; Neuendorff, E.W.; Peters, S.C.
Alexandria, Va. : The Society; 1988 Sep.
Journal of the American Society for Horticultural Science v. 113 (5): p. 657-661. ill; 1988 Sep. Includes references.

Language: English

Descriptors: Vaccinium ashei; Root distribution; Soil depth; Sandy loam soils; Mulches; Sawdust; Trickle irrigation; Sprinkler irrigation; Geometry; Mineral soils

Abstract: We studied the horizontal and vertical root distribution of 3-year-old 'Climax' rabbiteye blueberry (Vaccinium ashei Reade) in a sandy loam soil. Root density decreased logarithmically in the horizontal direction from the crown and linearly with depth. Ninety percent of the roots were within 0 to 0.38 m from the crown and 0 to 0.45 m depth. Roots spread more within the rows than across rows. Sawdust mulch increased the radial spread of roots, but did not promote rooting in the top 0.15 m of soil. Compared to one or two drip emitters per plants, low-volume spray emitters increased radial spread of roots, but only in combination with mulching. Greatest vertical rooting occurred with a single emitter at the base of the plant without mulch. Emitters placed 0.46 m from the crown of the plant did not help the spread of roots towards these emitters.

269 NAL Call No: 8 P832J
Root distribution of nitrogen fertigated sweet peppers under drip irrigation.
Goyal, M.R.; Crespo-Ruiz, M.; Rivera, L.E.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1988 Jan.
The Journal of agriculture of the University of Puerto Rico v. 72 (1): p. 51-55; 1988 Jan. Includes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Capsicum annuum; Root distribution; Fertirrigation; Nitrogen fertilizers; Trickle irrigation

270 NAL Call No: aSB608.S83S752
Root distribution of non-irrigated and trickle-irrigated peach trees.
Rhodes, D.J.; Armstrong, C.F.; Ligon, J.T.
Washington, D.C. : U.S. Dept. of Agriculture, Agricultural Research Service; 1986.
Stone fruit tree decline workshop proceedings : Clemson University, October 28-29, 1986. / [Zehr, Eldon I., editor]. p. 12-16; 1986. Includes references.

Language: English

Descriptors: South Carolina; Trickle irrigation; Prunus persica; Fruit trees; Loam soils; Sandy soils; Root distribution

271 NAL Call No: FICHE S-72
Root distribution of non-irrigated and trickle-irrigated peach trees.
Rhodes, D.J.; Armstrong, C.F.; Ligon, J.T.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2125): 10 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: South Carolina; Prunus persica; Root distribution; Trickle irrigation

272 NAL Call No: 81 SO12
Root growth and water status of trickle-irrigated cucumber and tomato.
Randall, H.C.; Locascio, S.J.
Alexandria, Va. : The Society; 1988 Nov.
Journal of the American Society for Horticultural Science v. 113 (6): p. 830-835; 1988 Nov. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Cucumis sativus; Trickle irrigation; Spacing; Design criteria; Plant water relations; Water requirements; Root distribution; Soil water content

Abstract: Two trickle irrigation experiments were conducted during two successive years with cucumber (Cucumis sativus L.) and tomato (Lycopersicon esculentum Mill.) grown on a coarse-textured soil in ground beds in a greenhouse. Several trickle irrigation design characteristics (emitter spacings of 15, 30, and 45 cm and one or two laterals per crop row) and water

management variables (2 or 8 liters/hr per emitter water application rates and water quantities equivalent to 0.25- and 0.50-times pan evaporation) were examined for their effect on soil water content, root distribution, and plant water status. Water application rates did not influence root density distributions or plant water status; however, the 8 liters.hr-1 water application rate resulted in higher water content in the top 20 cm of soil than the lower application rate. The higher water quantity resulted in higher soil water content, higher root density, and improved plant water status than with the lower quantity. Mature plants had root systems that were well-adapted to the different soil water distributions. Only the amount of water applied influenced the water status of mature cucumber plants and cucumber fruit yields.

273 NAL Call No: 80 AC82

Root system and nutritional status of peaches under drip or flood irrigation in warm climates.

Romo, R.; Diaz, D.H.

Wageningen : International Society for Horticultural Science; 1985 Dec.

Acta horticulturae (173): p. 167-175; 1985 Dec. In the series analytic: Peach Growing / edited by C. Fideghelli. Proceedings of an International Conference, July 9-13, 1984, Verona, Italy. Includes references.

Language: English

Descriptors: Prunus persica; Flooding; Trickle irrigation; Root systems; Mineral nutrition; Foliar diagnosis

274 NAL Call No: 55.9 IN8A

Row crop drip irrigation development with drip tape.

Hall, B.J.

New Delhi : The Commission; 1985 Jul.

ICID bulletin - International Commission on Irrigation and Drainage v. 34 (2): p. 56-57; 1985 Jul.

Language: English (Summary in French)

Descriptors: Rowcrops; Trickle irrigation; Tubes; Emitters; Crop yield

275 NAL Call No: FICHE S-72

A rule based system for the evaluation of drip irrigation system design.

Driscoll, M.A.; Cao, L.; Bralts, V.F.

St. Joseph, Mich. : The Society; 1987.

American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2038): 63 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices.

Language: English

Descriptors: Trickle irrigation; Design; Microcomputers; Performance appraisals

276 NAL Call No: QH541.5.D4A1

Saline water irrigation through drips and sprinklers.

Paliwal, K.V.

Jodhpur : Arid Zone Research Association of India; 1986 Mar.

Annals of arid zone v. 25 (1): p. 18-30; 1986 Mar. Includes references.

Language: English

Descriptors: India; Crops; Saline water; Irrigation systems; Trickle irrigation; Sprinkler irrigation; Responses; Salt tolerance; Physico-chemical properties of soil; Arid Zones

277 NAL Call No: FICHE S-72

Sample size determination for evaluating drip irrigation systems.

Pai Wu, I.; Irudayaraj, J.M.

St. Joseph, Mich. : The Society; 1986.

American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2569): 19 p.; 1986. Paper presented at the 1986 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Computer applications; Simulation models; Sampling techniques; Trickle irrigation; Performance appraisals

278 NAL Call No: 94.69 G29

Scheduling drip irrigation for young trees--what are we telling growers.

Tyson, T.W.; Curtis, L.M.

Starkville, Miss. : The Association; 1986.

Proceedings ... annual convention - Southeastern Pecan Growers Association (79th): p. 89-95; 1986. Includes references.

Language: English

Descriptors: Usa; Carya; Trickle irrigation; Irrigation scheduling; Water conservation; Soil water relations

279 NAL Call No: 80 F9464
Scheduling irrigation of pecans in Louisiana.
Edling, R.J.; Hummel, M.L.; Boudreaux, J.E.; Lartigue, M.G.; Taylor, V.
University Park, Pa. : American Pomological Society; 1987 Jul.
Fruit varieties journal v. 41 (3): p. 94-98; 1987 Jul. Includes references.

Language: English

Descriptors: Louisiana; Carya pecan; Cultivars; Irrigation scheduling; Trickle irrigation; Nitrogen fertilizers; Fertilizer application; Crop yield; Water stress

280 NAL Call No: TC423.W33
Scheduling of drip irrigated narrow row cotton.
Meron, M.; Phene, C.J.; Howell, T.A.; Davis, K.R.; Grimes, D.W.
New York : American Society of Civil Engineers; 1984.
Water today and tomorrow : proc. of Specialty Conf. sponsored by Irrigation and Drainage Div. of Am. Soc. Civil Engineers, Flatstaff, Az., July 24-26, 1984 / John A. Replogle and Kenneth G. Renard, Editors. p. 314-322. ill; 1984. Includes references.

Language: English

Descriptors: Rowcrops; Cotton; Irrigation scheduling; Trickle irrigation; Evapotranspiration

281 NAL Call No: S619.S66S4 1984
Seminar on Sprinkler and Drip Irrigation Systems proceedings.
India, Ministry of Irrigation, India, Central Board of Irrigation and Power
Seminar on Sprinkler and Drip Irrigation Systems 1984 : New Delhi, India.
New Delhi : The Board, 1984-; 1984-9999.
v. : ill., maps ; 25 cm. Seminar held at New Delhi on March 8-9, 1984. Includes bibliographies.

Language: English

Descriptors: Sprinkler irrigation--Congresses; Trickle irrigation--Congresses

282 NAL Call No: SB319.2.F6F56
Shallow water table fluctuation in response to rainfall, irrigation, and evapotranspiration in flatwoods citrus.
Obreza, T.A.; Admire, K.E.
s.l. : The Society; 1986.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 98: p. 32-37; 1986. Includes references.

Language: English

Descriptors: Florida; Citrus paradisi; Orchards; Subsurface layers; High water tables; Fluctuations; Responses; Rain; Trickle irrigation; Evapotranspiration; Soil water movement; Upward movement; Root Zone flux

283 NAL Call No: S612.I756
Short staple cotton under micro and level-basin irrigation methods.
Bucks, D.A.; Allen, S.G.; Roth, R.L.; Gardner, B.R.
Berlin, W. Ger. : Springer International; 1988.
Irrigation science v. 9 (3): p. 161-176; 1988. Includes references.

Language: English

Descriptors: Gossypium hirsutum; Cultivars; Irrigation systems; Trickle irrigation; Surface irrigation; Water management; Yield increases; Row spacing; Water use efficiency; Irrigation scheduling; Evapotranspiration

284 NAL Call No: QL391.N4J62
A simple, inexpensive, portable apparatus for injecting experimental chemicals in drip irrigation systems.
Radewald, J.D.; Shibuya, F.; McRae, N.; Platzer, E.G.
Raleigh, N.C. : Society of Nematologists; 1986 Jul.
Journal of nematology v. 18 (3): p. 423-425. ill; 1986 Jul.

Language: English

Descriptors: California; Nematicides; Dbcp; Pesticide application; Application equipment; Apparatus; Chemicals; Trickle irrigation

285 NAL Call No: 290.9 AM32T
Simulated feedback-operation of controlled-drainage/subirrigation systems.
Fouss, J.L.

St. Joseph, Mich. : The Society; 1985 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (3): p. 839-847; 1985 May. Includes references.

Language: English

Descriptors: Subsurface drainage; Subsurface irrigation; Simulation models; Feedback

286 NAL Call No: GB701.W375 no.87-4086
Simulation of trickle irrigation, an extension to the U.S. Geological Survey's computer program VS2D.
Healy, R. W.
Geological Survey (U.S.)
Denver, Colo. : Dept. of the Interior, U.S. Geological Survey : Books and Open-File Reports [distributor]; 1987.
v, 61 p. : ill. ; 28 cm. (Water-resources investigations report ; 87-4086). Bibliography: p. 21-22.

Language: English

Descriptors: Simulation methods; Trickle irrigation

287 NAL Call No: 309.9 N216
Small plot drip irrigation for third world countries.
Chapin, R.D.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 72-79. ill; 1986. Includes references.

Language: English

Descriptors: Developing countries; Trickle irrigation; Plastic mulches; Vegetables

288 NAL Call No: 290.9 AM3PS (IR)
Soil moisture flow in drainage-subirrigation system.
Brandyk, T.; Wesseling, J.G.
New York, N.Y. : American Society of Civil Engineers; 1987 Feb.
Journal of irrigation and drainage engineering v. 113 (1): p. 86-97. ill; 1987 Feb. Includes references.

Language: English

Descriptors: Drainage; Soil moisture; Irrigation systems; Water management

289 NAL Call No: FICHE S-72
Soil moisture status under drainage--subirrigation in the Georgia flatwoods.
Thomas, D.L.; Shirmohammadi, A.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2512): 19 p. ill; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Soil moisture; Status; Drainage; Subsurface irrigation; Models; Rubus fruticosus

290 NAL Call No: FICHE S-72
Soil moisture-sensitive valves for determining crop water use.
Evans, R.G.; Proebsting, E.L.; Kroeger, M.W.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2572): 17 p.; 1986. Paper presented at the 1986 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Prunus avium; Trickle irrigation; Irrigation water; Water use; Measurement; Equipment; Valves; Regression analysis

291 NAL Call No: TD201.W92
Soil watch shows sugar-cane response.
Kirby, C.
London : T. Telford Ltd; 1988 Oct.
World water v. 11 (9): p. 31, 33, 35. ill; 1988 Oct.

Language: English

Descriptors: Mauritius; Saccharum; Trickle irrigation; Irrigation systems; Tensiometers; Soil water balance; Yield response functions; Soil water movement; Water use efficiency

292 NAL Call No: FICHE S-72
Soil water distribution effect in drip irrigated apple orchard.
Levin, I.; Assaf, R.; Bravdo, B.

St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2041): 9 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Malus pumila; Orchards; Soil water; Distribution; Crop yield; Fruit; Size; Trunks; Growth

293 NAL Call No: FICHE 290.9 AM32P
Soil water distribution for a tensiometer controlled trickle irrigation system.
Martin, K.W.; Chesness, J.L.
St. Joseph, Mich. : The Society; 1984.
Paper - American Society of Agricultural Engineers (Microfiche collection) (84-2632): 25 p.; 1984. Paper presented at the 1984 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Tensiometers; Soil water movement

294 NAL Call No: S619.T74S5
Soil-water-plant properties as criteria for mobile irrigation system design.
Shani, U.; Bresler, E.1930-
United States-Israel Binational Agricultural Research and Development Fund
Bet Dagan, Israel : BARD; 1986.
62 leaves : ill. ; 28 cm. Final report. April 14, 1986. Project no. I-182-80. Bibliography: leaves [26-27].

Language: English

Descriptors: Trickle irrigation; Irrigation--Equipment and supplies; Soils, Irrigated

295 NAL Call No: 80 AC82
Solubility of Fe, Mn, Cu and Zn fertilizers as a function of the substrate type in a drip irrigation system.
Cadahia, C.; Garcia, P.; Lucena, J.J.; Sarro, M.J.; Garate, A.
Wageningen : International Society for Horticultural Science; 1988 Jul.
Acta horticulturae (222): p. 179-186; 1988 Jul. In the series analytic: Fertilization of vegetables under protected cultivation / edited by A. van Diest. Proceedings of the Symposium, April 6-10, 1987, Naaldwijk, Netherlands. Includes references.

Language: English

Descriptors: Trickle irrigation; Iron fertilizers; Manganese fertilizers; Copper fertilizers; Zinc fertilizers; Solubility; Trace elements; Interactions; Growing media; Chelating agents; Formulations

296 NAL Call No: 100 C12CAG
Soluble calcium compounds may aid low-volume water application.
Wildman, W.E.; Peacock, W.L.; Wildman, A.M.; Goble, G.G.; Pehrson, J.E.; O'Connell, N.V.
Berkeley, Calif. : The Station; 1988 Nov.
California agriculture - California Agricultural Experiment Station v. 42 (6): p. 7-9. ill; 1988 Nov.

Language: English

Descriptors: California; Citrus; Orchards; Vineyards; Trickle irrigation; Calcium; Water soluble compounds; Water use efficiency; Infiltration; Sandy loam soils; Soil treatments

297 NAL Call No: 292.8 W295
Solute transfer and extraction from trickle irrigation source: the effective hemisphere model.
Zemel, A.; Ben-Asher, J.; Charach, C.; Silberbush, M.
Washington, D.C. : American Geophysical Union; 1987 Nov.
Water resources research v. 23 (1): p. 2091-2096; 1987 Nov. Includes references.

Language: English

Descriptors: Trickle irrigation; Plants; Water uptake; Salts; Transport processes in soil systems; Root systems; Flow; Ions; Models; Extraction

298 NAL Call No: 292.8 W295
Solute travel times during trickle irrigation.
Clothier, B.E.
Washington, D.C. : American Geophysical Union; 1984 Dec.
Water resources research v. 20 (12): p. 1848-1852; 1984 Dec. Includes references.

Language: English

Descriptors: Trickle irrigation; Solutions; Transport models

299 NAL Call No: S619.T74C62 1976
Spot systems drip irrigation manual.
Congdon, Jon M.
Kirkland, Wash. : Spot Systems, c1974; 1976.
47 p. : ill., form ; 29 cm. Cover title: Drip irrigation manual. Reprint. Originally published: 1974.

Language: English

Descriptors: Trickle irrigation

300 NAL Call No: 80 AM371
Sprinkler and drip irrigation systems: a detailed overview.
Smith, R.C.
Chicago, Ill. : American Nurseryman Publishing Co; 1986 Mar15.
American nurseryman v. 163 (6): p. 68-70, 72-74, 78. ill; 1986 Mar15.

Language: English

Descriptors: Sprinkler irrigation; Trickle irrigation; Irrigation systems; Planning; Installations; Methodology; Equipment

301 NAL Call No: TC823.P52
Sprinkler and subirrigation research park for multiple cropping research.
Maw, B.W.; Thomas, D.L.
New York, N.Y. : The Society; 1988.
Planning now for irrigation and drainage in the 21st century : proc of a conference : Lincoln, Nebraska, July 18-21, 1988 / sponsored by the Irrig and Drain Div of the American Soc of Civil Engineers ; edited by D.R. Hay. p. 341-347. ill; 1988. Includes references.

Language: English

Descriptors: Georgia; Multiple cropping; Rotations; Sprinkler irrigation; Subsurface irrigation; Research projects

302 NAL Call No: 290.9 AM32T
A statistical analysis of trickle irrigation uniformity.
Clemmens, A.J.
St. Joseph, Mich. : The Society; 1987 Jan.
Transactions of the ASAE - American Society of Agricultural Engineers v. 30 (1): p. 169-175; 1987 Jan. Includes references.

Language: English

Descriptors: Trickle irrigation; Statistical analysis; Simulation models

303 NAL Call No: 290.9 AM32T
Statistical approach for drip lateral design.
Anyoji, H.; Wu, I.P.
St. Joseph, Mich. : The Society; 1987 Jan.
Transactions of the ASAE - American Society of Agricultural Engineers v. 30 (1): p. 187-192; 1987 Jan. Includes references.

Language: English

Descriptors: Trickle irrigation; Statistics

304 NAL Call No: 80 AC82
A study on strawberry water requirements.
Strabbioli, G.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 179-186; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Italy; Fragaria ananassa; Varieties; Sprinkler irrigation; Trickle irrigation; Irrigation scheduling; Yield response functions

305 NAL Call No: 290.9 AM32T
Subirrigation system control for water use efficiency.
Smith, M.C.; Skaggs, R.W.; Parsons, J.E.
St. Joseph, Mich. : The Society; 1985 Mar.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (2): p. 489-496. ill; 1985 Mar. Includes references.

Language: English

Descriptors: Irrigation systems; Water use efficiency; Computer simulation

306 NAL Call No: TC970.N35 1987
Subsurface and outflow water quality from drainage-subirrigation systems.
Thomas, D.L.; Shirmohammadi, A.; Lowrance, R.R.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1987.
Drainage design and management : proceedings of the Fifth National Drainage Symposium, Decem-

ber 14-15, 1987, Hyatt Regency Chicago in Illinois Center. p. 195-202; 1987. (ASAE publication ; 07-87). Includes references.

Language: English

Descriptors: Subsurface drainage; Subsurface irrigation; Water composition and quality

307 NAL Call No: S539.5.A77
Subsurface drip irrigation of bermudagrass with saline water.
Devitt, D.A.; Miller, W.W.
New York, N.Y. : Springer; 1988.
Applied agricultural research v. 3 (3): p. 133-143. ill; 1988. Includes references.

Language: English

Descriptors: Cynodon dactylon; Trickle irrigation; Subsurface irrigation; Saline water

308 NAL Call No: FICHE S-72
Sub-surface micro-irrigation of potatoes in Colorado.
Bisconer, I.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2033): 7 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Colorado; Subsurface irrigation; Trickle irrigation; Solanum tuberosum; Crop yield; Quality; Economic analysis

309 NAL Call No: SB476.G7
Successful drip irrigation.
Bisconer, I.
Overland Park, Kan. : Intertec Publishing Corporation; 1988 Jul.
Grounds maintenance v. 23 (7): p. IR3, IR12-IR13, IR18. ill; 1988 Jul.

Language: English

Descriptors: Trickle irrigation; Irrigation equipment; Performance; Selection; Guidelines

310 NAL Call No: FICHE S-72
Sugarcane yield, biomass, leaf area, and water-use efficiency.
Shih, S.F.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2083): 27 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Saccharum officinarum; Water use efficiency; Leaf area; Biomass; Crop yield; Evapotranspiration

311 NAL Call No: FICHE S-72
Surface and subsurface trickle irrigation for corn.
Camp, C.R.; Sadler, E.J.; Busscher, W.J.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2571): 12 p. ill; 1986. Paper presented at the 1986 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: South Carolina; Loam soils; Sandy soils; Trickle irrigation; Zea mays; Yields; Irrigation water; Water requirements

312 NAL Call No: TD201.W92
Surge irrigation can cut waste.
Stringham, G.; Keller, J.
London, Eng. : T. Telford Ltd; 1987 Sep.
World water v. 10 (8): p. 27, 29. ill; 1987 Sep.

Language: English

Descriptors: California; Irrigation systems; Irrigation scheduling; Water flow resistance; Soil field water balance; Application methods

313 NAL Call No: S494.5.W3A3
Surge irrigation management.
Izuno, F.T.; Podmore, T.H.

Amsterdam : Elsevier Scientific; 1986 Sep.
Agricultural water management v. 11 (3/4): p. 279-291; 1986 Sep. Includes references.

Language: English

Descriptors: Pulse irrigation; Application; Computer simulation; Simulation models; Flow; Infiltration

314 NAL Call No: 290.9 AM32T
Surge irrigation optimization model.
Alemi, M.H.; Goldhamer, D.A.
St. Joseph, Mich. : American Society of Agricultural Engineers; 1988 Mar.
Transactions of the ASAE v. 31 (2): p. 519-526; 1988 Mar. Includes references.

Language: English

Descriptors: Pulse irrigation; Simulation models

315 NAL Call No: 309.9 N216
Survey results on plastic mulch use in the United States.
Schales, F.D.
Peoria, Ill. : National Agricultural Plastics Association; 1989.
Proceedings of the ... National Agricultural Plastics Congress (21st): p. 95-101; 1989. Includes references.

Language: English

Descriptors: Usa; Plastic mulches; Soil fumigation; Biodegradable plastics; Trickle irrigation; Horticultural crops

316 NAL Call No: SD1.F73
Survival and growth of containerized native juniper (Juniperus monosperma) on surface-mined lands in New Mexico.
Fisher, J.T.; Fancher, G.A.; Neumann, R.W.
Amsterdam : Elsevier; 1986 Oct.
Forest ecology and management v. 16 (1/4): p. 291-299; 1986 Oct. Includes references.

Language: English

Descriptors: New Mexico; Juniperus monosperma; Revegetation plants; Mined land; Fertilizers; Planting date; Mulches; Trickle irrigation; Survival; Plant protection

317 NAL Call No: 4 AM34P
Sweet corn response to surface and subsurface trickle phosphorus fertigation.
Bar-Yosef, B.; Sagiv, B.; Markovitch, T.
Madison, Wis. : American Society of Agronomy; 1989 May.
Agronomy journal v. 81 (3): 443-447; 1989 May. Includes references.

Language: English

Descriptors: Israel; Zea mays; Fertirrigation; Phosphorus fertilizers; Trickle irrigation; Subsurface irrigation; Surface irrigation; Crop yield; Ears (plant); Yield components; Soil solution; Nutrient removal by plants; Dry matter accumulation

Abstract: High-frequency phosphorus fertigation may increase the time-average P concentration in the soil solution above that expected from P solubility considerations. Where P is a yield-limiting factor, frequent P fertigation may increase yield by stimulating P-uptake by the roots. A field experiment was conducted on a loessial soil (Haploxeralf) high in NaHCO3-extractable P (0.8 mmol kg-1 soil) to test the hypothesis that subsurface placement of emitters (SSR) is more effective in stimulating P uptake than surface placement (SR). Four concentrations of P in the water (Cp), 0.04, 0.16, 0.64, and 1.29 mol P m-3, were applied via surface or subsurface emitters to sweet corn [Zea mays (L.) Jubilee]. Marketable ear yield increased with Cp, yielding 22.9, 24.3, 24.9 and 28.9 t ha-1, respectively. Yield was higher for tricklers placed 30 cm below soil surface (25.2 t ha-1) than on the surface (23.5 t ha-1). Elevated Cp increased the soil solution P concentration, thereby increasing total P uptake and total dry matter production by the plants. Deep trickler placement significantly increased the fraction of total dry matter allocated to the ears, which resulted in higher marketable yield. Subsurface irrigation also reduced weed growth due to the dry top soil during the experiment.

318 NAL Call No: FICHE S-72
Sweet pepper response to drip, microsprinkler, and furrow irrigation.
Goyal, M.R.; Gonzalez, E.A.; Rivera, L.E.; Chao, C.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2523): 13 p.; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Puerto Rico; Trickle irrigation; Sprinkler irrigation; Furrow irrigation; Capsicum; Responses; Crop yield

319 NAL Call No: SB249.N6
Systems approach to drip irrigation in Texas. A. History and potential.
Henggeler, J.C.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 168-170; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Crop yield

320 NAL Call No: SB249.N6
Systems approach to drip irrigation in Texas. C. Changes in insect pest management.
Allen, C.T.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 173-174; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Insect pests; Insect control; Insecticide application

321 NAL Call No: SB249.N6
Systems approach to drip irrigation in Texas. D. Economics.
Patterson, R.W. Jr
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 174-183; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana.

Language: English

Descriptors: Texas; Gossypium; Trickle irrigation; Costs; Returns; Crop yield

322 NAL Call No: TC803.I78
Tailwater management with surge irrigation.
Westendorp, J.A.; Podmore, T.H.
New York, N.Y. : ASCE; 1987.
Irrigation systems for the 21st century : proceedings of a conference : Portland, Oregon, July 28-30, 1987 / edited by Larry G. James and Marshall J. English. p. 401-408; 1987. Includes references.

Language: English

Descriptors: Irrigation systems; Runoff water; Water management; Hydrology

323 NAL Call No: 290.9 AM32T
Temperature effects on drip line hydraulics.
Peng, G.F.; Wu, I.P.; Phene, C.J.
St. Joseph, Mich. : The Society; 1986 Jan.
Transactions of the ASAE - American Society of Agricultural Engineers v. 29 (1): p. 211-215; 1986 Jan. Includes references.

Language: English

Descriptors: Trickle irrigation; Temperature relations; Hydraulic equipment

324 NAL Call No: 309.9 N216
Ten years of progress with drip irrigation.
Grove, R.W.
Peoria, Ill. : National Agricultural Plastics Association; 1981.
Proceedings of the ... National Agricultural Plastics Congress (16th): p. 177-181; 1981.

Language: English

Descriptors: California; Trickle irrigation; Crop yield; Productivity; Crop production

325 NAL Call No: SB387.V6
Tennessee's TVA wine grape research: a final report.
Mays, D.A.
The Plains, Va. : Vinifera Wine Growers Association; 1988.
The Vinifera wine growers journal v. 15 (4): p. 237-242; 1988.

Language: English

Descriptors: Alabama; Vitis; Cultivation methods; Variety trials; Vineyards; Stand establishment; Tending of stands and trees; Training (plant); Pruning; Fertilizer application; Disease control; Insect control; Trickle irrigation; Crop yield

326 NAL Call No: 72.8 C8214I
'The sky's the limit'.
Certain, G.

Willoughby, Ohio : Meister Publishing Company; 1989.
Cotton international (56th): p. 72, 74. ill; 1989.

Language: English

Descriptors: Arizona; Gossypium barbadense; Trickle irrigation; Irrigation water; Saline water; Carbon dioxide; Ph; Yield increases; Deserts; Water composition and quality

327 NAL Call No: 290.9 AM32T
Three-dimensional infiltration and trickle irrigation.
Clothier, B.; Scotter, D.; Harper, E.
St. Joseph, Mich. : The Society; 1985 Mar.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (2): p. 497-501. ill., maps; 1985 Mar. Includes references.

Language: English

Descriptors: Trickle irrigation; Infiltration; Soil water movement

328 NAL Call No: 65.9 H317
Tillage and water effects on yields of drip-irrigated sugarcane in an Oxisol.
Santo, L.T.; Bosshart, R.P.
Aiea, Hawaii : The Technologists; 1985.
Reports ... Annual conference - Hawaiian Sugar Technologists (43rd): p. FE16-FE18; 1985. Presented at the Annual Conference "Productivity Through People and Technology," November 12-14, 1984, Honolulu, Hawaii.

Language: English

Descriptors: Saccharum; Crop yield; Tillage; Trickle irrigation; Oxisols

329 NAL Call No: 8 P832J
Tomato and sweet pepper response to furrow, microsprinkler and drip irrigation.
Goyal, M.R.; Chao de Baez, C.
Rio Piedras, R.R. : University of Puerto Rico, Agricultural Experiment Station; 1989 Jul.
The Journal of agriculture of the University of Puerto Rico v. 73 (3): p. 239-254. ill; 1989 Jul. Includes references.

Language: English (Summary in Spanish)

Descriptors: Puerto Rico; Capsicum; Lycopersicon esculentum; Irrigation requirements; Furrow irrigation; Sprinkler irrigation; Yield response functions

330 NAL Call No: 100 T25F
Tomato production with trickle irrigation and raised beds.
Abdal, M.S.; Coffey, D.L.
Knoxville, Tenn. : The Station; 1988.
Tennessee farm and home science : progress report - Tennessee Agricultural Experiment Station (148): p. 4-7. ill; 1988. Includes references.

Language: English

Descriptors: Tennessee; Lycopersicon esculentum; Trickle irrigation; Crop yield; Early maturation; Quality; Cultural methods

331 NAL Call No: 81 SO12
Tomato response to trickle irrigation and black polyethylene mulch.
Bhella, H.S.
Alexandria, Va. : The Society; 1988 Jul.
Journal of the American Society for Horticultural Science v. 113 (4): p. 543-546; 1988 Jul. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Plastic mulches; Polyethylene film; Plant development; Yield factors; Petiole analysis; Nutrient uptake; Nutrient availability

332 NAL Call No: SB1.H6
Tomato root development affected by traveling trickle irrigation rate.
Sanders, D.C.; Howell, T.A.; Hile, M.M.S.; Hodges, L.; Phene, C.J.
Alexandria, Va. : American Society for Horticultural Science; 1989 Dec.
HortScience v. 24 (6): p. 930-933; 1989 Dec. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Growth rate; Root distribution; Trickle irrigation; Soil moisture; Irrigation requirements

333 NAL Call No: SB1.H6
Tomato yield and nitrogen recovery as influenced by irrigation method, nitrogen source, and mulch.
Sweeney, D.W.; Graetz, D.A.; Bottcher, A.B.; Locascio, S.J.; Campbell, K.L.
Alexandria, Va. : American Society for Horticultural Science; 1987 Feb.
HortScience v. 22 (1): p. 27-29; 1987 Feb. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Yields; Nitrogen recovery; Responses; Trickle irrigation; Overhead irrigation; Nitrogen fertilizers; Mulching

334 NAL Call No: 450 C16
Tomato yield as related to drip lateral spacing and fertilizer application on total and wetted area basis.
Singh, S.D.; Singh, Y.V.; Bhandari, R.C.
Ottawa : Agricultural Institute of Canada; 1989 Jul.
Canadian journal of plant science; Revue canadienne de phytotechnie v. 69 (3): p. 991-999; 1989 Jul. Includes references.

Language: English (Summary in French)

Descriptors: Lycopersicon esculentum; Plant production; Crop yield; Crop density; Fertilizer application; Trickle irrigation; Roots; Growth rate; Soil temperature; Soil moisture

335 NAL Call No: SB476.G7
Top tips for tip-top installation.
Keesen, L.
Overland Park, Kan. : Intertec Publishing Corporation; 1988 Jun.
Grounds maintenance v. 23 (6): p. IR-6-IR-8. ill; 1988 Jun.

Language: English

Descriptors: Trickle irrigation; Irrigation equipment; Installations; Guidelines

336 NAL Call No: SB317.5.L65
Trickle irrigation.
Riverhead, N.Y. : Cornell Cooperative Extension; 1988 Sep.
Long Island horticulture news. p. 3; 1988 Sep.

Language: English

Descriptors: Trickle irrigation; Soil moisture; Fruit trees; Water conservation; Labor costs

337 NAL Call No: SB317.5.L65
Trickle irrigation.
Roberts, W.J.
Riverhead, N.Y. : Cornell Cooperative Extension; 1988 Aug.
Long Island horticulture news. p. 4; 1988 Aug.

Language: English

Descriptors: Trickle irrigation; Evaluation

338 NAL Call No: 275.29 Ar4Mi no.271
Trickle irrigation causes and prevention of emitter plugging.
Pitts, Donald J.
Little Rock : Cooperative Extension Service, University of Arkansas, U.S. Department of Agriculture and County Government cooperating; 1987.
12 p. : ill. ; 28 cm. (MP / University of Arkansas. Cooperative Extension Service ; no. 271). Cover title. Bibliography: p. 12.

Language: English

339 NAL Call No: S671.D44 no.9
Trickle irrigation for crop production design, operation, and management.
Nakayama, F. S.,1930-; Bucks, D. A.
Amsterdam ; New York : Elsevier ; St. Joseph, MI, U.S.A. : Distributors for the U.S. and Canada, American Society of Agricultural Engineers; 1986.
x, 383 p. : ill. ; 25 cm. (Developments in agricultural engineering ; 9). Includes bibliographies and index.

Language: English

Descriptors: Trickle irrigation

340 NAL Call No: SB319.2.F6F56
Trickle irrigation for establishing rooted cuttings for cut flower chrysanthemum production.
Stanley, C.D.; Harbaugh, B.K.
s.l. : The Society; 1985 Jun.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 97: p. 307-309; 1985 Jun. Includes references.

Language: English

Descriptors: Chrysanthemum; Cut-flower production; Rooting; Cuttings; Crop establishment; Trickle irrigation; Overhead irrigation; Plastic mulches; Antitranspirants

341 NAL Call No: 309.9 N216
Trickle irrigation for fruit crops in the humid east.
Funt, R.C.; Ross, D.S.
Peoria, Ill. : National Agricultural Plastics Association; 1981.
Proceedings of the ... National Agricultural Plastics Congress (16th): p. 182-191; 1981. Includes references.

Language: English

Descriptors: Maryland; Malus pumila; Prunus; Trickle irrigation; Crop yield; Humid Zones

342 NAL Call No: S544.3.V8V52
Trickle irrigation for home gardens.
Drinkwater, W.O.; Carpenter, H.E.
Blacksburg, Va. : Extension Division, Virginia Polytechnic Institute and State University; 1988 Jan.
Publication - Virginia Cooperative Extension Service (442-056): 4 p. ill; 1988 Jan.

Language: English

Descriptors: Domestic gardens; Trickle irrigation; Mulches; Irrigation equipment

343 NAL Call No: S619.T74T7
Trickle irrigation in Pakistan results of a collaborative experimental project.
Appropriate Technology Development Organisation (Pakistan),Irrigation, Drainage, and Flood Control Research Council
Islamabad : Appropriate Technology Development Organization : Irrigation, Drainage and Flood Control Research Council; 1982.
27 p. : ill. (some col.) ; 28 cm. Bibliography: p. 27.

Language: English

Descriptors: Trickle irrigation--Pakistan

344 NAL Call No: S612.W3
Trickle irrigation lateral design on a programmable calculator.
Gelber, E.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1987 Jan.
Water & irrigation review. p. 6-9; 1987 Jan. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Computer software; Design; Minicomputers

345 NAL Call No: 290.9 AM32T
Trickle irrigation lateral line design by computer analysis.
Pitts, D.J.; Ferguson, J.A.; Wright, R.E.
St. Joseph, Mich. : The Society; 1986 Sep.
Transactions of the ASAE - American Society of Agricultural Engineers v. 29 (5): p. 1320-1324. ill; 1986 Sep. Includes references.

Language: English

Descriptors: Trickle irrigation; Experimental designs; Computer analysis

346 NAL Call No: S612.W3
Trickle irrigation of cotton: single versus twin row spacing.
Oron, G.; DeMalach, J.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1985 Oct.
Water & irrigation review (4): p. 24-27. ill; 1985 Oct.

Language: English

Descriptors: Trickle irrigation; Gossypium; Row spacing

347 NAL Call No: QH540.J6
Trickle irrigation of cotton with treated sewage effluent.
Papadopoulos, I.; Stylianou, Y.
Madison, Wis. : American Society of Agronomy; 1988 Oct.
Journal of environmental quality v. 17 (4): p. 574-580; 1988 Oct. Includes references.

Language: English

Descriptors: Gossypium hirsutum; Sewage effluent; Application to land; Trickle irrigation; Soil fertility; Soil salinity; Nitrogen; Nitrates; Semiarid Zones

Abstract: The objectives of this field study, conducted in 1984 through 1986, were to assess the long-term effects of applying treated municipal effluent (ECw = 2.6 dS m-1. SAR = 12.0) by trickle irrigation on soil N fertility, soil salinity, and yield of cotton (Gossypium hirsutum L. cv. Sindos 1980) under semiarid conditions. Secondary treated effluent was compared with borehole water. Both waters were supplemented with 0, 30, 60, and 90 mg N L-1. The N concentration in the effluent was about 30 mg L-1 during the 3 yr of experimentation. The residual soil NO3-N and the NO3-N concentrations in laminae and petioles were in general greater in the effluent-irrigated crops. With both waters, excessive salt buildup occurred at the periphery of the wetting front. Sodium adsorption ratio (SAR) was reduced beneath the dripper in the surface 15 and 30 cm depth with borehole water and effluent, respectively, but below this depth the reverse occurred. Under the conditions of soil type, climate, and borehole water and effluent qualities used during this experiment, effluent was generally superior to borehole water, particularly at the lower N levels in increasing

yields. The seedcotton yield obtained in the first season was significantly greater in the effluent irrigated treatments supplemented with N up to 60 mg L-1; in 1985 and 1986 seasons, yield with treated effluent was significantly higher in comparison with borehole water when additional N of 30 mg L-1 was applied. It can be concluded that municipal-treated effluent containing 30 mg N L-1 can be used effectively by trickle irrigation systems as a source of irrigation water and N, and with appropriate N and water management, ecological hazards due in NO3-N are minimized, and salinity and sodicity are maintained at acceptable levels for cotton.

348 NAL Call No: TC823.P52
Trickle irrigation of peppers in Eastern Canada.
Rigby, M.; Madramootoo, C.A.; Argall, J.F.; Stewart, K.A.
New York, N.Y. : The Society; 1988.
Planning now for irrigation and drainage in the 21st century : proc of a conference : Lincoln, Nebraska, July 18-21, 1988 / sponsored by the Irrig and Drain Div of the American Soc of Civil Engineers ; edited by D.R. Hay. p. 305-312; 1988. Includes references.

Language: English

Descriptors: Quebec; Capsicum annuum; Trickle irrigation; Humid Zones; Nitrogen fertilizers; Fertirrigation; Crop yield

349 NAL Call No: SB319.2.F6F56
Trickle irrigation rates for Chrysanthemum cut flower production.
Harbaugh, B.K.; Stanley, C.D.; Price, J.F.
s.l. : The Society; 1986.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 98: p. 110-114; 1986. Includes references.

Language: English

Descriptors: Chrysanthemum; Varieties; Trickle irrigation; Cut flowers; Yields; Quality

350 NAL Call No: 81 SO12
Trickle irrigation requirements for strawberries in coastal California.
McNiesh, C.M.; Welch, N.C.; Nelson, R.D.
Alexandria, Va. : The Society; 1985 Sep.
Journal of the American Society for Horticultural Science v. 110 (5): p. 714-718; 1985 Sep. Includes references.

Language: English

Descriptors: California; Fragaria ananassa; Crop yield; Water requirements; Trickle irrigation; Evapotranspiration; Irrigation scheduling; Soil moisture; Water use efficiency

351 NAL Call No: 275.29 F66
Trickle irrigation scheduling for Florida citrus.
Smajstrla, A.G.; Harrison, D.S.; Zazueta, F.S.; Parsons, L.R.; Stone, K.C.
Gainesville, Fla : The Service; 1987 Sep.
Bulletin - Florida Cooperative Extension Service, University of Florida (208): 46 p. ill; 1987 Sep.

Language: English

Descriptors: Florida; Citrus; Irrigation scheduling; Trickle irrigation

352 NAL Call No: 290.9 AM32T
Trickle irrigation screen filter performance as affected by sand size and concentration.
Zeier, K.R.; Hills, D.J.
St. Joseph, Mich. : The Society; 1987 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 30 (3): p. 735-739; 1987 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Filters; Sand; Particle size

353 NAL Call No: SB1.H6
A trickle irrigation system for recycling residential wastewater on fruit trees.
Gamble, J.
Alexandria, Va. : American Society for Horticultural Science; 1986 Feb.
HortScience v. 21 (1,section 1): p. 28-32. ill; 1986 Feb. Paper presented at the "Workshop on Wastewater Utilization in Horticulture," August 10, 1982, Ames, Iowa. Includes references.

Language: English

Descriptors: Michigan; Fruit trees; Trickle irrigation; Waste waters; Residential areas; Waste water treatment; Irrigation systems

354 NAL Call No: 275.29 F66C
Trickle irrigation utilities.
Zazueta, F.S.; Smajstrla, A.G.; Harrison, D.S.
Gainesville, Fla. : The Service; 1983 Nov.
Circular - Florida Cooperative Extension Service (580): 9 p. ill; 1983 Nov. In subseries: Computer

Series.

Language: English

Descriptors: Florida; Trickle irrigation; Computer software; Microcomputers; Operational control

355 NAL Call No: 290.9 AM3PS
Trickle lateral hydraulics. I. Analytical solution.
Warrick, A.W.; Yitayew, M.
New York : American Society of Civil Engineers; 1988 May.
Journal of energy engineering v. 114 (2): p. 281-288; 1988 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Hydraulics; Pipelines; Measuring orifices

356 NAL Call No: 290.9 AM3PS
Trickle lateral hydraulics. II. Design and examples.
Yitayew, M.; Warrick, A.W.
New York : American Society of Civil Engineers; 1988 May.
Journal of energy engineering v. 114 (2): p. 289-300; 1988 May. Includes references.

Language: English

Descriptors: Trickle irrigation; Hydraulics; Design calculations; Flow meters

357 NAL Call No: S539.5.J62
Trickling irrigation, progress and problems.
Abdel Aziz, M.H.
Riyadh, Saudi Arabia : University Libraries, King Saud University; 1979.
Journal of the College of Agriculture, King Saud University v. 1: p. 3-10; 1979. Includes references.

Language: English (Summary in Arabic)

Descriptors: Trickle irrigation; Irrigation equipment; Design; Blockage

358 NAL Call No: 8 P832J
Two drip irrigation rates and two emitter placements on tomato production.
Navarro, A.; Newman, J.
Mayaguez : University of Puerto Rico, Agricultural Experiment Station; 1989 Jan.
The Journal of agriculture of the University of Puerto Rico v. 73 (1): p. 23-29; 1989 Jan. Includes references.

Language: English (Summary in Spanish)

Descriptors: United states virgin Islands; Lycopersicon esculentum; Trickle irrigation; Emitters; Irrigation; Crop yield

359 NAL Call No: 80 AM371
Underground irrigation: more than meets the eye.
Statham, M.L. Sr
Chicago, Ill. : American Nurseryman Publishing Company; 1989 Jul15.
American nurseryman v. 170 (2): p. 53-57; 1989 Jul15.

Language: English

Descriptors: Tennessee; Subsurface irrigation; Trickle irrigation; Nurseries; Water use efficiency; Fertirrigation

360 NAL Call No: 290.9 AM32T
A uni-plot for drip irrigation lateral and submain design.
Wu, I.P.
St. Joseph, Mich. : The Society; 1985 Mar.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (2): p. 522-528. ill; 1985 Mar. Includes references.

Language: English

Descriptors: Trickle irrigation; Pressure; Velocity

361 NAL Call No: FICHE S-72
Upward free water movement from buried trickle emitters.
Zimmer, A.L.; McFarland, M.J.; Moore, J.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2063): 17 p. ill; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Texas; Trickle irrigation; Emitters; Soil moisture; Soil salinity; Subsurface irrigation

362 NAL Call No: SB1.H6
Use of a portable pumping and filtering unit for on-farm plastic mulch-drip irrigation demonstrations.

Lamont, W.J.
Alexandria, Va. : American Society for Horticultural Science; 1989 Oct.
HortScience v. 24 (5): p. 848-849. ill; 1989 Oct. Includes references.

Language: English

Descriptors: North Carolina; Demonstration farms; Extension agents; Extension education; Plastic mulches; Pumps; Trickle irrigation; Vegetables; Crop yield; Cultivars

363 NAL Call No: 23 AU792
Use of a trickle irrigation system to distribute entomopathogenic nematodes (Nematoda: Heterorhabditidae) for the control of weevil pests (Coleoptera: Curculionidae) of strawberries.
Curran, J.; Patel, V.
Melbourne : Commonwealth Scientific and Industrial Research Organization; 1988.
Australian journal of experimental agriculture v. 28 (5): p. 639-643; 1988. Includes references.

Language: English

Descriptors: Tasmania; Fragaria; Coleoptera; Insect pests; Nematoda; Predators of insect pests; Insect control; Trickle irrigation; Distribution; Plastic mulches

364 NAL Call No: 94.69 G29
Use of irrigation'applied nutrients in pecan production.
Atiken, J.B.
Starkville, Miss. : The Association; 1986.
Proceedings ... annual convention - Southeastern Pecan Growers Association (79th): p. 99-103; 1986. Includes references.

Language: English

Descriptors: South Carolina; Carya; Fertirrigation; Trickle irrigation

365 NAL Call No: 58.8 J82
Use of pulse irrigaton for reducing clogging problems in trickle emitters.
Jackson, R.C.; Kay, M.G.
London : Academic Press; 1987 Jul.
Journal of agricultural engineering research v. 37 (3): p. 223-227. ill; 1987 Jul. Includes references.

Language: English

Descriptors: Pulse irrigation; Trickle irrigation; Emitters; Blockage; Wetting

366 NAL Call No: QK870.I5 1987
Use of tensiometers for scheduling drip-irrigated cotton.
Wierenga, P.J.; Fowler, J.L.; Davis, D.D.
Logan, Utah : Utah State University, [1987?]; 1987.
Proceedings of International Conference on Measurement of Soil and Plant Water Status : in commemoration of the centennial of Utah State University, July 6-10, 1987, Logan, Utah. v. 1 p. 157-161; 1987. Includes references.

Language: English

Descriptors: Gossypium; Irrigated conditions; Trickle irrigation; Irrigation scheduling; Soil water; Tension; Measurement; Tensiometers; Crop yield

367 NAL Call No: SB319.2.F6F56
Use of tensiometers for scheduling of citrus trickle irrigation.
Smajstrla, A.G.; Koo, R.C.
s.l. : The Society; 1986, reprinted 1987.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 99: p. 51-56; 1986, reprinted 1987. Includes references.

Language: English

Descriptors: Florida; Citrus sinensis; Trickle irrigation; Irrigation scheduling; Automatic irrigation systems; Tensiometers

368 NAL Call No: SB1.H6
Using greenhouse plant beds for demonstrating plastic mulch, trickle irrigation, and row covers.
Decoteau, D.R.
Alexandria, Va. : American Society for Horticultural Science; 1988 Aug.
HortScience v. 23 (4): p. 774; 1988 Aug. Includes references.

Language: English

Descriptors: Citrullus lanatus; Greenhouse experimentation; Bedding plants; Demonstrations; Education; Extension; Plastic mulches; Trickle irrigation

369 NAL Call No: 275.29 F66C
Utilities for main line and submain line design.
Zazueta, F.S.; Harrison, D.S.; Smajstrla, A.G.
Gainesville, Fla. : The Service; 1983 Nov.
Circular - Florida Cooperative Extension Service (582): 13 p.; 1983 Nov. In subseries: Computer Series.

Language: English

Descriptors: Trickle irrigation; Pipelines; Computer programming

370 NAL Call No: 275.29 F66C
V. Diagnosis and treatment of iron and slime clogging problems.
Zazueta, F.S.; Smajstrla, A.G.; Harrison, D.S.; Ford, H.W.
Gainesville, Fla. : The Service; 1983 Nov.
Circular - Florida Cooperative Extension Service (585): 5 p.; 1983 Nov. In subseries: Computer Series. Includes references.

Language: English

Descriptors: Trickle irrigation; Blockage; Iron; Microbial sludge; Computer software; Chemical treatment; Sodium hypochlorite

371 NAL Call No: FICHE S-72
Variable cycle time effects in surge irrigation.
Mangers, H.L.; Hooker, M.L.; Ortel, T.W.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2583): 8 p.; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Furrow irrigation; Operating time; Irrigation equipment; Automatic control

372 NAL Call No: S539.5.J62
Vegetable crop (lettuce) response to different methds of irrigation.
Abdulla, N.Y.; Abdel-Aziz, M.H.; Khalil, M.
Riyadh, Saudi Arabia : University Libraries, King Saud University; 1981.
Journal of the College of Agriculture, King Saud University v. 3: p. 91-106; 1981. Includes references.

Language: English (Summary in Arabic)

Descriptors: Lactuca sativa; Irrigation; Trickle irrigation; Furrow irrigation

373 NAL Call No: S600.2.I57 1987
Vegetative and cropping performance influenced by evapotranspiration and irrigation.
Mannini, P.
Cesena? : Fondazione Cesena Agricultura; 1987.
Agrometeorology : 2nd International Cesena Agricultura Conference, Cesena, 8-9 October 1987 / edited by Franco Prodi, Federica Rossi, Graziella Cristoferi. p. 381-385. ill; 1987.

Language: English

Descriptors: Italy; Malus pumila; Evapotranspiration; Trickle irrigation; Crop yield

374 NAL Call No: 290.9 AM3PS (IR)
Velocity head considerations for trickle laterals.
Yitayew, M.; Warrick, A.W.
New York, N.Y. : American Society of Civil Engineers; 1987 Nov.
Journal of irrigation and drainage engineering v. 113 (4): p. 611-615; 1987 Nov. Includes references.

Language: English

Descriptors: Trickle irrigation; Velocity; Flow constants

375 NAL Call No: 4 AM34P
Vesicular-arbuscular mycorrhizal fungus infestation and phosphorus fertigation to overcome pepper stunting after methyl bromide fumigation.
Haas, J.H.; Bar-Yosef, B.; Krikun, J.; Barak, R.; Markovitz, T.; Kramer, S.
Madison, Wis. : American Society of Agronomy; 1987 Sep.
Agronomy journal v. 79 (5): p. 905-910; 1987 Sep. Includes references.

Language: English

Descriptors: Israel; Capsicum annuum; Methyl bromide; Soil fumigation; Plant diseases; Mycorrhizal fungi; Phosphorus; Fertirrigation; Soil inoculation; Trickle irrigation; Arid Zones

376 NAL Call No: FICHE S-72
A volume balance model of surge irrigation.
Reddell, D.L.; Latortue, H.F.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2114): 24 p.; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Simulation models; Volume; Balance studies; Hydraulics; Gravity; Irrigation; Infiltration

377 NAL Call No: 80 G85W
Walnut irrigation: The underground story.
Stockwin, W.
Willoughby, Ohio : Meister Pub. Co; 1988 May.
Western fruit grower v. 108 (5): p. 46-47. ill; 1988 May.

Language: English

Descriptors: California; Juglans; Cultivars; Plant production; Trickle irrigation; Equipment; Techniques; Efficiency; Performance; Water management

378 NAL Call No: SB319.2.F6F56
Water and fertilizer timing for trickle-irrigated tomatoes.
Locascio, S.J.; Olson, S.M.; Rhoads, F.M.; Stanley, C.D.; Csizinszky, A.A.
s.l. : The Society; 1986.
Proceedings of the ... annual meeting of the Florida State Horticulture Society v. 98: p. 237-239; 1986. Includes references.

Language: English

Descriptors: Florida; Lycopersicon esculentum; Sandy soils; Fertilizer application; Trickle irrigation; Application date; Irrigation scheduling; Yields

379 NAL Call No: NBUS619 T74 I79 1977
Water and irrigation Irrigation Symposium program.
Irrigation Symposium and Equipment Show 1977.
Bloomington, Calif. : International Associates; 1977.
31 p. : ill. (some col.) ; 28 cm. Cover title. November 1977.

Language: English

Descriptors: Irrigation--Equipment and supplies--Congresses; Trickle irrigation--Congresses

380 NAL Call No: 290.9 AM32T
Water and salt movement during subirrigation of organic soils of the Sacramento-San Joaquin Delta.
Hanson, B.R.; Carlton, A.B.
St. Joseph, Mich. : The Society; 1985 May.
Transactions of the ASAE - American Society of Agricultural Engineers v. 28 (3): p. 815-818; 1985 May. Includes references.

Language: English

Descriptors: California; Soil water movement; Irrigation water; Organic soils; Soil salinity

381 NAL Call No: FICHE S-72
Water balance simulation procedures for non-irrigated and trickle-irrigated peach trees.
Armstrong, C.F.; Ligon, J.T.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2521): 20 p.; 1987. Paper presented at the 1987 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Simulation models; Prunus persica; Fruit trees; Trickle irrigation; Water balance; Evapotranspiration; Infiltration; Soil moisture

382 NAL Call No: 80 AC82
Water consumption in high density peach trees.
Natali, S.; Xiloyannis, C.; Mugano, M.
Wageningen : International Society for Horticultural Science; 1985 Dec.
Acta horticulturae (173): p. 413-420; 1985 Dec. In the series analytic: Peach Growing / edited by C. Fideghelli. Proceedings of an International Conference, July 9-13, 1984, Verona, Italy. Includes references.

Language: English

Descriptors: Prunus persica; High density planting; Trickle irrigation; Water requirements; Evapotranspiration; Soil moisture; Growth rate; Yields; Productivity

383 NAL Call No: 80 AC82
Water consumptive use of greenhouse tomatoes as related to various levels of soil water potential under drip irrigation.
Michelakis, N.G.; Chartzoulakis, K.S.
Wageningen : International Society for Horticultural Science; 1988 Sep.
Acta horticulturae (228): p. 127-136; 1988 Sep. Paper presented at the Fourth International Symposium on Water Supply and Irrigation in the

Open and Under Protected Cultivation, August 26-28, 1985, Padova, Italy. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Greenhouse experimentation; Trickle irrigation; Irrigation scheduling; Tensiometers; Gypsum blocks; Soil water potential; Yield response functions; Water use efficiency

384 **NAL Call No: FICHE S-72**
Water deficit effects on apple quality and maturity.
Evans, R.G.; Probsting, E.L.; Drake, S.R.; Mahan, M.O.
St. Joseph, Mich. : The Society; 1985.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2601): 14 p.; 1985. Paper presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Water deficit; Malus pumila; Responses

385 **NAL Call No: S596.7.A8 1984**
Water distribution patterns and tomato seedling emergence under trickle irrigation on clay loam soil in the Goulburn Valley.
Ashcroft, W.J.; Mitchell, P.D.; Jerie, P.H.
Melbourne : CSIRO, [1985?]; 1985.
Root zone limitations to crop production on clay soils : Symposium of the Australian Society of Soil Science Inc. Riverina Branch, Griffith, N.S.W. 25-27 September 1984 / editors: W.A. Muirhead, E. Humphreys. p. 241-248; 1985. Includes references.

Language: English

Descriptors: Clay loam soils; Trickle irrigation; Soil water movement; Lycopersicon esculentum; Seedling emergence

386 **NAL Call No: S494.5.W3B43**
Water efficiency with micro-irrigation.
Balogh, J.
Paris : Institut national de la recherche agronomique; 1985.
Les Besoins en eau des cultures; Crop water requirements : conf int, Versailles (France), 11-14 sept. 1984 / tenue au siege de l'Unesco avec le concours de l'OAA et de l'OMM; held at Unesco under auspices of FAO and WMO. p. 547-556. ill; 1985. Paper presented at an International Conference on "Crop Water Requirements," September 11-14, 1984, Versailles, France. Includes references.

Language: English (Summary in French)

Descriptors: Zea mays; Glycine max; Trickle irrigation; Sprinkler irrigation; Water use efficiency

387 **NAL Call No: 81 SO12**
Water quantity and time of N and K application for trickle-irrigated tomatoes.
Locascio, S.J.; Olson, S.M.; Rhoads, F.M.
Alexandria, Va. : The Society; 1989 Mar.
Journal of the American Society for Horticultural Science v. 114 (2): p. 265-268; 1989 Mar. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Irrigation scheduling; Irrigation requirements; Fertirrigation; Split dressings; Nitrogen fertilizers; Potassium fertilizers; Crop yield; Sandy loam soils

Abstract: Tomatoes (Lycopersicon esculentum Mill.) were grown during two seasons at two locations on fine sands and fine sandy loam soils to study the influence of water quantity, frequency of water application, and timing of N and K application for polyethylene-mulched, trickle-irrigated fresh-market tomatoes. Water quantities were 0.50 and 1.0 times pan evaporation applied one or three times daily. Nitrogen and K were applied 100% preplant or 40% applied preplant and 60% applied with trickle irrigation. Higher tomato leaf tissue N and K concentrations in one of the two seasons and higher fruit yields were obtained with 0.5 than with 1.0 time pan water evaporation on a fine sand at Gainesville, Fla. On a fine sandy loam soil at Quincy, fruit yields were higher in a relatively dry season with the higher water quantity and not influenced by the water quantity applied in the second relatively wet season. The number of daily water applications (one vs. three) at both locations had no effect on N and K uptake or fruit yields. Time of N and K applications had no effect on early yields, but total yields were higher with split than all preplant-applied N and K on the fine sandy soil. Split applications of fertilizer resulted in

greater yields of extra-large fruit at mid-season and of extra large fruit at late harvest than all preplant-applied fertilizer. On the fine sandy loam soil, time of fertilizer application had no effect on yield.

388 NAL Call No: 80 AC82
Water relations and nutritional level of leaves and fruits of apple.
Marangoni, B.; Pisa, P.R.
Wageningen : International Society for Horticultural Science; 1985 Jul.
Acta horticulturae (171): p. 119-130; 1985 Jul. Presented at the First International Symposium on Water Relations in Fruit Crops, Pisa, Italy, September 3-5, 1984. Includes references.

Language: English

Descriptors: Italy; Malus pumila; Apples; Trickle irrigation; Leaf analysis; Fruit analysis; Plant water relations; Nutrient contents of plants; Nutritional value

389 NAL Call No: SB249.N6
Water relations of drip- and furrow-irrigated cotton in Arizona.
Radin, J.W.; Mauney, J.R.; Kerridge, P.C.
Memphis, Tenn. : National Cotton Council and The Cotton Foundation; 1988.
Proceedings - Beltwide Cotton Production Research Conferences. p. 81; 1988. Conference held on January 3-8, 1988, New Orleans, Louisiana. Includes abstract.

Language: English

Descriptors: Arizona; Gossypium hirsutum; Trickle irrigation; Furrow irrigation; Plant water relations; Water potential; Hydraulic conductivity

390 NAL Call No: 81 SO12
Water relations of grapefruit trees in response to drip, microsprinkler, and overhead sprinkler irrigation.
Zekri, M.; Parsons, L.R.
Alexandria, Va. : The Society; 1988 Nov.
Journal of the American Society for Horticultural Science v. 113 (6): p. 819-823; 1988 Nov. Includes references.

Language: English

Descriptors: Citrus paradisi; Sprinkler irrigation; Overhead irrigation; Trickle irrigation; Leaf water potential; Stomatal resistance; Soil water content; Stomatal movement; Water stress

Abstract: Water relations responses of 21-year-old grapefruit trees (Citrus paradisi Macf.) irrigated by three types of irrigation systems were compared. Drip, undertree microsprinkler, and overhead sprinkler with application levels of 150 and 450 mm of water per year were compared. Leaf water potential, stomatal conductance, and soil water status were measured under field conditions on a deep, well-drained sandy soil in central Florida. In the early part of a dry spring period, there were no differences in midday or early morning leaf water potential, but, by the end of this period, significant differences in leaf water potential were found among all three irrigation treatments. Highest leaf water potential and stomatal conductance values were maintained in the overhead sprinkler blocks. No midday stomatal closure was observed under the conditions of this study. Relationships among diurnal leaf water potentials, vapor pressure deficits, and stomatal conductance showed hysteresis; this affected the correlations among these factors. Greater water stress occurred in trees irrigated with drip than in trees irrigated with overhead sprinkler systems, but responses to microsprinklers were generally intermediate between the overhead sprinkler and the drip treatments. In an area with high rainfall and sandy soils, increased irrigation coverage can reduce leaf water stress.

391 NAL Call No: FICHE S-72
Water stress effects of trickle irrigated cotton.
Fangmeier, D.D.; Garrot, D.J. Jr; Husman, S.H.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2065): 15 p.; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Gossypium; Trickle irrigation; Water stress; Yield response functions; Soil moisture

392 NAL Call No: S544.3.N6N62
Water supplies for subirrigation.
Evans, R.O.; Sneed, R.E.; Skaggs, R.W.
Raleigh, N.C. : The Service; 1987 Dec.
AG - North Carolina Agricultural Extension Service, North Carolina State University (389): 13 p. ill., maps; 1987 Dec.

Language: English

Descriptors: North Carolina; Subsurface irrigation; Water supplies; Water composition and quality; Pumps; Power

393 NAL Call No: 4 AM34P
Water transfer through cotton plants connecting soil regions of differing water potential.
Baker, J.M.; Van Bavel, C.H.M.
Madison, Wis. : American Society of Agronomy; 1988 Nov.
Agronomy journal v. 80 (6): p. 993-997. ill; 1988 Nov. Includes references.

Language: English

Descriptors: Gossypium hirsutum; Root systems; Water transfer; Soil water potential; Xylem water potential; Soil water balance; Irrigation requirements; Irrigation scheduling; Computer simulation

Abstract: Several studies have shown that water can move through plant root systems from wet to dry soil during periods of low evaporative demand. It has been suggested that such movement could be important in alternate furrow or drip irrigation systems, where water is applied in a discrete or nonuniform manner. This study was undertaken to examine this question, using a physical experiment and computer simulation. A growth chamber experiment was conducted with three rows of cotton (Gossypium hirsutum L.) plants. The outer row plants were grown over vertical barriers such that half of their root systems shared a volume of soil with the center row plants, while the other half was hydraulically isolated in separate soil compartments. The center compartment was allowed to dry, while the outer compartments were watered daily. Soil moisture was measured throughout all compartments twice daily by gamma densitometry. When the potential gradient between center and outer compartments reached 1.0 MPa, the gamma readings showed overnight movement of water from wet to dry soil that could only have taken place through the root systems of the outer row plants. The overnight transfer of water, while significant, was not sufficient to fully supply the daytime transpiration demand of the unirrigated center row plants. It was also less than that predicted by computer simulation, unless the latter reflected the inability of the xylem water potential of cotton plants to equilibrate with soil water potential during periods of low evaporative demand. Regardless, the results suggest that water transfer by root systems should not be excluded in simulations of water movement in the soil-plant-atmosphere system.

394 NAL Call No: 64.8 C883
Water uptake by cotton roots during fruit filling in relation to irrigation frequency.
Radin, J.W.; Mauney, J.R.; Kerridge, P.C.
Madison, Wis. : Crop Science Society of America; 1989 Jul.
Crop science v. 29 (4): p. 1000-1005; 1989 Jul. Includes references.

Language: English

Descriptors: Arizona; Gossypium hirsutum; Fruiting; Water use efficiency; Trickle irrigation; Irrigation scheduling; Arid climate; Leaf water potential; Water uptake; Root hydraulic conductivity; Stomatal resistance; Transpiration

Abstract: Yield of irrigated cotton (gossypium hirsutum L.) increases as the interval between water applications is decreased, even if the total amount of water applied is unchanged. Experiments were undertaken to compare season-long water relations of high-frequency drip-irrigated cotton (1- to 2-d intervals) to cotton irrigated at approximately 2-wk intervals. The crop was grown at two locations in central Arizona on a Mohall sandy loam (fine-loamy, mixed, hyperthermic Typic Haplargid) and an Avondale clay loam (fine-loamy, mixed, hyperthermic Typic Torrifluvent) soils. In 2-yr trials at each location, irrigation frequency had inconsistent effects on midday leaf water potential during vegetative growth. When the crop developed a heavy fruit load, however, leaf water potential of plants on the longer cycles was much lower than that of drip-irrigated plants, even after irrigation when ample soil moisture should have been available. Plant hydraulic conductances, estimated from regressions of single-leaf transpiration rate against leaf water potential, were high in both treatments early in the season. Hydraulic conductance decreased greatly during fruiting in plants on long irrigation cycles but less so in drip-irrigated plants. Late in the season, after fruit maturation and during plant regrowth, conductances were again high and similar in the two treatments. The results imply that during heavy fruiting, mild water stress associated with long irrigation cycles triggers deterioration of the root system that is very slow to be reversed. High-frequency drip irrigation, by preventing cyclical stress, apparently minimized

this deterioration during fruit filling.

395 NAL Call No: SB371.N3
Water use by peach trees.
Coston, D.C.
Martinsburg, W. Va. : The Council; 1985.
Proceedings ... annual convention - National Peach Council (44th): p. 61-64. ill; 1985.

Language: English

Descriptors: Prunus persica; Fruit trees; Water use; Growth; Development; Sprinkler irrigation; Trickle irrigation

396 NAL Call No: FICHE S-72
Water use by tensiometer controlled trickle irrigated peach trees.
Chesness, J.; Couvillion, G.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2124): 23 p.; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices.

Language: English

Descriptors: Georgia; Prunus persica; Trickle irrigation; Automatic control; Tensiometers; Water use

397 NAL Call No: 309.9 N216
Water use studies on trickle irrigated tomatoes.
Singh, G.; Borah, D.K.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 87-104; 1986. Includes references.

Language: English

Descriptors: Lycopersicon esculentum; Trickle irrigation; Rain; Fertilizer application; Rowcrops

398 NAL Call No: S605.5.R64
Water works.
Burnett, J.
Emmaus, Pa. : Rodale Press; 1987 Oct.
Rodale's organic gardening v. 34 (10): p. 62-72. ill; 1987 Oct.

Language: English

Descriptors: Trickle irrigation; Irrigation equipment

399 NAL Call No: SB299.P3D4
Watering beds with porous tubing.
Lomax, K.M.
Amsterdam : Elsevier Scientific Pub. Co; 1987.
Developments in crop science v. 10: p. 487-492. ill; 1987. In the series analytic: Cultivating edible fungi / edited by P.J. Wuest, D.J. Royse and R.B. Beelman. Proceedings of an International Symposium, July 15-17, 1986, University Park, Pennsylvania. Includes references.

Language: English

Descriptors: Mushroom casing soils; Irrigation systems; Trickle irrigation; Pipes; Design

400 NAL Call No: 309.9 N216
Watermelon growth, yield, and nutrition as influenced by plastic mulch and trickle irrigation.
Bhella, H.S.
Peoria, Ill. : National Agricultural Plastics Association; 1986.
Proceedings of the ... National Agricultural Plastics Congress (19th): p. 295-301; 1986. Includes references.

Language: English

Descriptors: Citrullus lanatus; Growth rate; Crop yield; Plastic mulches; Trickle irrigation; Roots; Soil chemistry; Plant nutrition

401 NAL Call No: 100 C12CAG
Weed control by subsurface drip irrigation.
Grattan, S.R.; Schwankl, L.J.; Lanini, W.T.
Berkeley, Calif. : The Station; 1988 May.
California agriculture - California Agricultural Experiment Station v. 42 (3): p. 22-24. ill; 1988 May.

Language: English

Descriptors: California; Weed control; Water management; Subsurface irrigation; Trickle irrigation; Efficiency

402 NAL Call No: FICHE S-72
Wetting patterns for line-source trickle emitters.
Camp, C.R.; Busscher, W.J.; Sadler, E.J.
St. Joseph, Mich. : The Society; 1987.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2524): 16 p.; 1987. Paper presented at the 1987 Winter Meeting

of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Trickle irrigation; Emitters; Wetting; Patterns; Layered soils; Tubes; Placement; Soil water; Tensiometers

403 NAL Call No: 1.98 AG84
When it never rains enough.
Senft, D.
Washington, D.C. : The Administration; 1988 Aug.
Agricultural research - U.S. Department of Agriculture, Agricultural Research Service v. 36 (7): p. 11-15. ill; 1988 Aug.

Language: English

Descriptors: Usa; Irrigation systems; Sprinkler irrigation; Trickle irrigation; Surface irrigation; Computers

404 NAL Call No: 57.8 SO4
Will drip irrigation boost cotton yields?
Janat, M.M.; Strochlein, J.L.
St. Louis, Mo. : Solutions Magazine; 1987 Jan.
Solutions v. 31 (1): p. 42-46. ill; 1987 Jan. Includes references.

Language: English

Descriptors: Gossypium hirsutum; Cotton; Yield factors; Trickle irrigation; Phosphorus; Plant nutrition; Nutrient uptake

405 NAL Call No: S612.W3
Wrapping plastic irrigation pipes to prevent woodpecker damage.
Dolinsky, M.
Tel Aviv, Israel : Amir Cohen Advertising Ltd; 1986 Oct.
Water & irrigation review. p. 24. ill; 1986 Oct.

Language: English

Descriptors: Trickle irrigation; Plastic pipes; Woodpeckers; Damage

406 NAL Call No: SB1.H6
Yield and composition of muskmelon as influenced by preplant and trickle applied nitrogen.
Bhella, H.S.; Wilcox, G.E.
Alexandria, Va. : American Society for Horticultural Science; 1986 Feb.
HortScience v. 21 (1,section 1): p. 86-88; 1986 Feb. Includes references.

Language: English

Descriptors: Loam soils; Sandy soils; Nitrogen fertilizers; Application methods; Fertirrigation; Trickle irrigation; Cucumis melo; Yields

407 NAL Call No: SB1.H6
Yield and plant nutrient content of vegetables trickle-irrigated with municipal wastewater.
Neilsen, G.H.; Stevenson, D.S.; Fitzpatrick, J.J.; Brownlee, C.H.
Alexandria, Va. : American Society for Horticultural Science; 1989 Apr.
HortScience v. 24 (2): p. 249-252; 1989 Apr. Includes references.

Language: English

Descriptors: British Columbia; Lycopersicon esculentum; Capsicum annuum; Allium cepa; Cucumis sativus; Phaseolus vulgaris; Cucumis melo; Trickle irrigation; Waste waters; Sewage effluent; Yield response functions; Nutrient contents of plants; Sandy loam soils; Physico-chemical properties of soil

408 NAL Call No: 81 SO12
Yield and quality of processing tomatoes in response to irrigation rate and schedule.
Sanders, D.C.; Howell, T.A.; Hile, M.M.S.; Hodges, L.; Meek, D.; Phene, C.J.
Alexandria, Va. : The Society; 1989 Nov.
Journal of the American Society for Horticultural Science v. 114 (6): p. 904-908; 1989 Nov. Includes references.

Language: English

Descriptors: California; Lycopersicon esculentum; Processing; Cultivars; Trickle irrigation; Irrigation scheduling; Yield response functions; Fruit; Quality; Characteristics; Water use efficiency; Furrow irrigation

Abstract: Field studies were conducted on a Typic Xerorthents Entiosols soil (Hanford sandy loam) to determine the response of two cultivars of processing tomatoes (Lycopersicon esculentum Mill.) to trickle irrigation applied at three percentages of evapotranspiration (ET) to either the top of the plant row or between the beds using a traveling irrigation system. Irrigation was terminated when

fruits were either 30% or 70% red 14 or 7 days before harvest). Yields of red tomatoes and total tomatoes increased with increasing trickle irrigation water. The concentrations of soluble solids (SSC) and total solids (TS) and pH decreased with increasing trickle irrigation rates, while color, fruit size, and acidity increased, as did the yield of SSC and TS per hectare. Placement of trickle irrigation on the plant row was more favorable than placement in the furrow between the beds for yield and quality characteristics. Trickle irrigation to 70% ET terminated 7 days before harvest produced responses similar to conventional furrow irrigation. Although statistically these treatments could not he compared directly to conventional furrow, all traveling trickle irrigation rates were superior in water use efficiency to that of the conventional furrow irrigation. Trickle irrigation rates of 35% ET, 70% ET, and 105% ET did not differ in water use efficiency. Chemical names used: 2(a-naphthoxy)- N,N-diethyl propionamide (napropamide); S-propyl butylethiocarbamate pebulate).

409 NAL Call No: 4 AM34P

Yield and quality response of subirrigated meadow vegetation to nitrogen, phosphorus and sulfur fertilizer.

Nichols, J.T.; Reece, P.E.; Hergert, G.W.; Moser, L.E.

Madison, Wis. : American Society of Agronomy; 1990 Jan.

Agronomy journal v. 82 (1): p. 47-52; 1990 Jan. Includes references.

Language: English

Descriptors: Nebraska; Meadows; Grazing lands; Subsurface irrigation; Nitrogen fertilizers; Phosphorus fertilizers; Sulfur fertilizers; Fertilizer application; Crop yield; Dry matter accumulation; Nitrogen uptake; Nitrogen recovery; Crop quality; Crude protein; In vitro digestibility

Abstract: Production practices that increase hay yields are important for beef cattle producers in the Nebraska Sandhills. This study evaluated the responses of subirrigated meadow vegetation to fertilization with N, P, and S over a 4-yr period. A factorial array of four levels of N (0, 45, 90 and 135 kg ha-1), two levels of P (0 and 20 kg ha-1) and two levels of S (0 and 22 kg ha-1) were applied each year to the same plots, arranged in a randomized complete block design. Average dry matter yields were increased by N, P, and S. There were no fertilizer interaction effects. Yields increased quadratically as N levels increased. For each 45 kg increment of N applied from 0 to 135 kg ha-1, dry matter yield (pooled over P and S) increased 1002, 703, and 402 kg ha-1, respectively. Main effects of P and S increased dry matter yields by 4662 and 577 kg ha-1, respectively. Nitrogen uptake was increased linearly by fertilization with N, P, and S. Forage N use efficiency decreased as N fertilizer rates increased. Crude protein (CP) declined quadratically as N rates increased, but the maximum change was less than 10 g kg-1. In vitro dry matter digestibility (IVDMD) declined linearly as N rates increased. Sulfur and P did not affect either CP or IVDMD. Yield responses were sufficient to justify the use of N, P, and S to increase subirrigated meadow production. Less of forage quality (CP and IVDMD) was not sufficient to nullify this conclusion.

410 NAL Call No: 1 EX892EX

Yields up in a dry season.

Lamont, W.J. Jr

Washington, D.C. : The Administration; 1986.

Extension review - United States Department of Agriculture v. 57 (3): p. 26-27. ill; 1986.

Language: English

Descriptors: North Carolina; Extension education; Vegetables; Crop yield; Crop production; Trickle irrigation

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